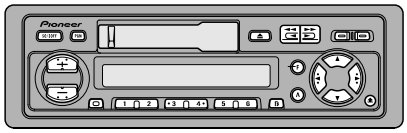
Service Manual

KEH-1800/X1M/EW



ORDER NO.
CRT2265

HIGH POWER CASSETTE PLAYER WITH FM/MW/LW TUNER

KEH-1800

X1M/EW

KEH-1830

X1M/EW

NOTE:

- **See the separate manual CX-644(CRT1800) for the cassette mechanism description.**
- **The cassette mechanism assy employed in this model is one of 2M series.**

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K-ZZB. DEC. 1998 Printed in Japan

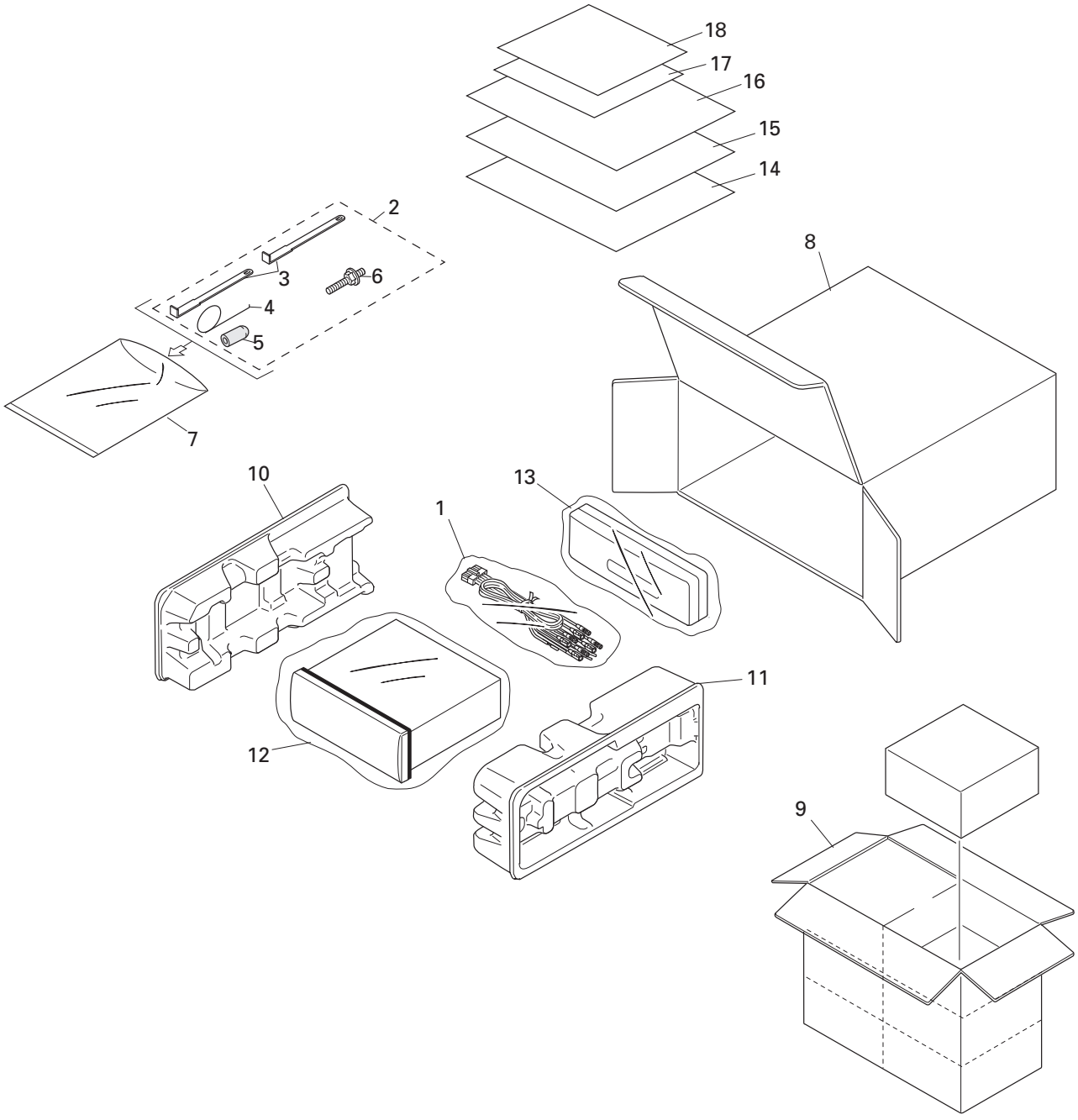
1. SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

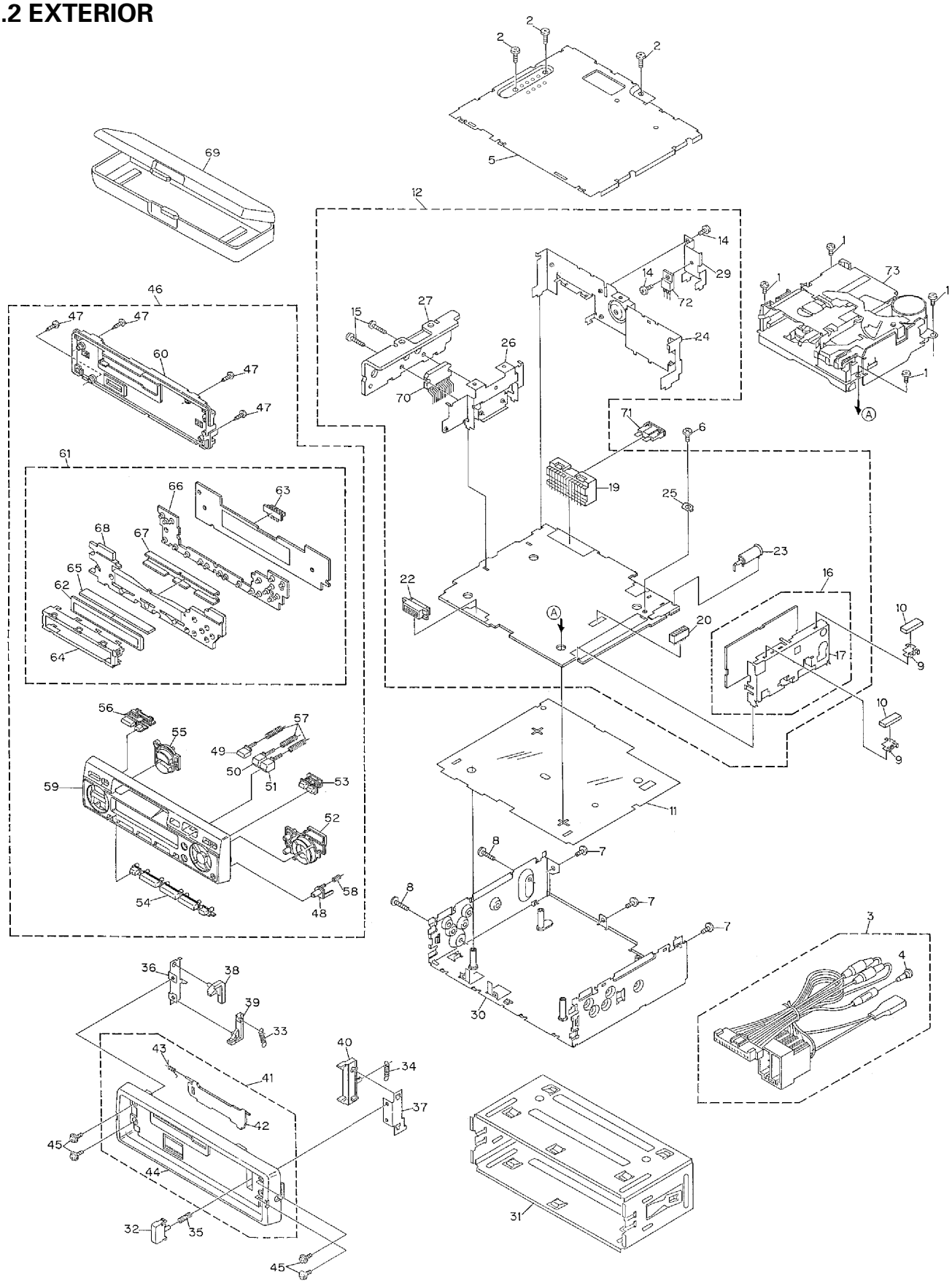
● PACKING SECTION PARTS LIST

Mark No.		Description	Part.No KEH-1800/X1M/EW	Part.No KEH-1830/X1M/EW
	1	Cord Assy	CDE5807	CDE5807
	2	Accessory Assy	CEA1917	CEA1917
	3	Handle	CNC5395	CNC5395
	4	Spring	CBH1650	CBH1650
	5	Bush	CNV3930	CNV3930
	6	Screw	CBA1304	CBA1304
*	7	Polyethylene Bag	E36-615	E36-615
	8	Carton	CHG3621	CHG3622
	9	Contain Box	CHL3621	CHL3622
	10	Protector	CHP1622	CHP1622
	11	Protector	CHP1623	CHP1623
	12	Polyethylene Bag	CEG-162	CEG-162
	13	Case Assy	CXB3520	CXB3520
	14	Owner's Manual	CRD2810	CRD2810
	15	Owner's Manual	CRD2811	CRD2811
	16	Installation Manual	CRD2812	CRD2812
*	17	Passport	CRY1013	CRY1013
*	18	Warranty Card	CRY1087	CRY1087

● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-1800/X1M/EW KEH-1830/X1M/EW	CRD2810	English,Spanish,Dutch
	CRD2811	French,Italian,German
	CRD2812	English,Spanish,Dutch,French,Italian,German

2.2 EXTERIOR


2
2
2
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69
12
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72
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73
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1
1
A
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71
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4
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32
35
45
31

(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BSZ26P050FMC
2	Screw	BSZ30P100FMC
3	Cord Assy	CDE5807
4	Terminal Cover	CKX-003
5	Case	CNB2481
6	Screw	BSZ30P055FUC
7	Screw	BSZ30P060FMC
8	Screw	BSZ30P100FMC
9	Holder	CNC5704
10	Cushion	CNM4870
11	Insulator	CNM5025
12	Tuner Amp Unit	CWM6351
13	•••••	
14	Screw	BSZ26P080FMC
15	Screw	BSZ26P140FMC
16	FM/AM Tuner Unit	CWE1466
17	Holder	CNC6554
18	•••••	
19	Plug(CN601)	CKM1270
20	Connector(CN604)	CKS3362
21	•••••	
22	Connector(CN603)	CKS3581
23	Antenna Jack(CN301)	CKX1056
24	Panel	CNB2246
25	Holder	CNC5399
26	Holder	CNC6216
27	Heat Sink	CNC6217
28	•••••	
29	Holder	CNC6845
30	Chassis Unit	See Contrast table(2)
31	Holder Unit	CXB2687
32	Button	CAC4836
33	Spring	CBH1834
34	Spring	CBH1835
35	Spring	CBH1996
36	Bracket	CNC6135
37	Bracket	CNC6791
38	Arm	CNV4692
39	Arm	CNV4693
40	Arm	CNV4728

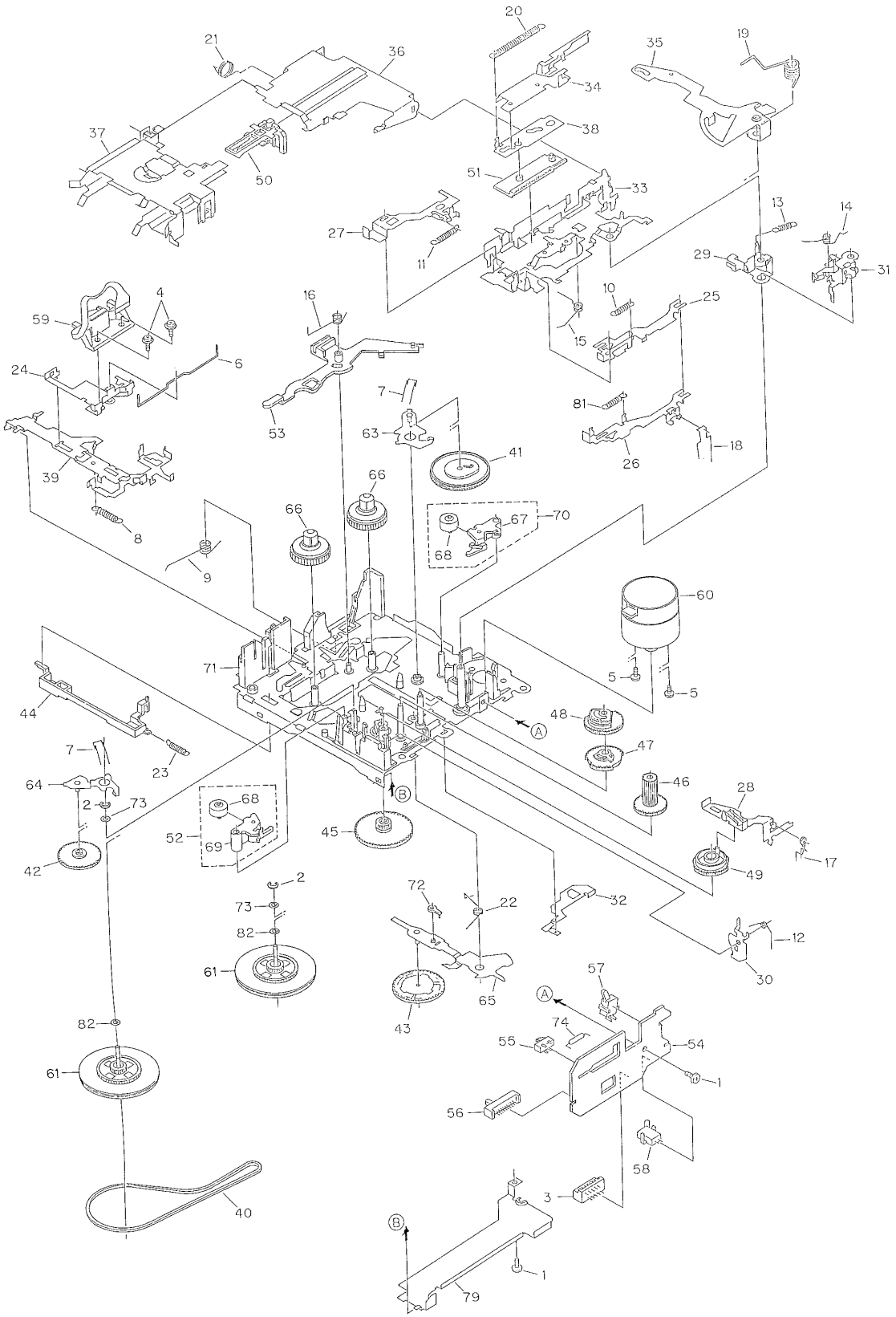
Mark No.	Description	Part No.
41	Panel Unit	See Contrast table(2)
42	Door	See Contrast table(2)
43	Spring	CBH1838
44	Panel	See Contrast table(2)
45	Screw	IMS20P030FZK
46	Detach Grille Assy	See Contrast table(2)
47	Screw	BPZ20P120FZK
48	Button(Detachable)	See Contrast table(2)
49	Button(Eject)	See Contrast table(2)
50	Button(REW)	See Contrast table(2)
51	Button(FF)	See Contrast table(2)
52	Button(F,A,Cross)	See Contrast table(2)
53	Button(-,-)	See Contrast table(2)
54	Button(1-6,D,B)	See Contrast table(2)
55	Button(+,-)	See Contrast table(2)
56	Button(SO/OFF,PGM)	See Contrast table(2)
57	Spring	CBH1836
58	Spring	CBH2103
59	Grille	See Contrast table(2)
60	Cover	See Contrast table(2)
61	Keyboard Unit	See Contrast table(2)
62	LCD(LCD901)	CAW1513
63	Connector(CN901)	CKS3580
64	Holder	CNC8054
65	Connector	CNV5586
66	Rubber	CNV5587
67	Holder	CNV5589
68	Lighting Conductor	CNV5752
69	Case Assy	CXB3520
70	IC(IC501)	TDA7384
71	Fuse(10A)(FU951)	CEK1136
72	Transistor(Q804)	2SD2396
73	Cassette Mechanism Assy	EXK3450

(2) CONTRAST TABLE

KEH-1800/X1M/EW and KEH-1830/X1M/EW are constructed the same except for the following:

Mark	No.	Description	Part No.	
			KEH-1800/X1M/EW	KEH-1830/X1M/EW
	30	Chassis Unit	CXB3226	CXB3227
	41	Panel Unit	CXB3714	CXB3716
	42	Door	CAT2028	CAT2037
	44	Panel	CNS5211	CNS5212
	46	Detach Grille Assy	CXB3377	CXB3378
	48	Button(Detachable)	CAC5868	CAC5869
	49	Button(Eject)	CAC5870	CAC5871
	50	Button(REW)	CAC5872	CAC5873
	51	Button(FF)	CAC5874	CAC5875
	52	Button(Cross,A,F)	CAC5876	CAC5877
	53	Button(-,-)	CAC5878	CAC5879
	54	Button(D,B,1-6)	CAC5985	CAC5986
	55	Button(+,-)	CAC5882	CAC5883
	56	Button(SO/OFF,PGM)	CAC5884	CAC5885
	59	Grille	CNS5204	CNS5205
	60	Cover	CNS5209	CNS5210
	61	Keyboard Unit	CWM6273	CWM6275

2.3 CASSETTE MECHANISM ASSY



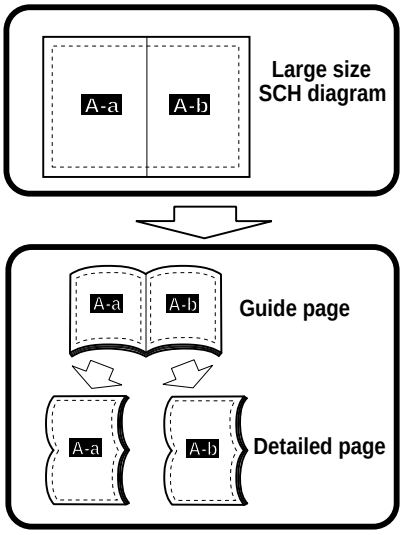
● CASSETTE MECHANISM ASSY SECTION PARTS LIST

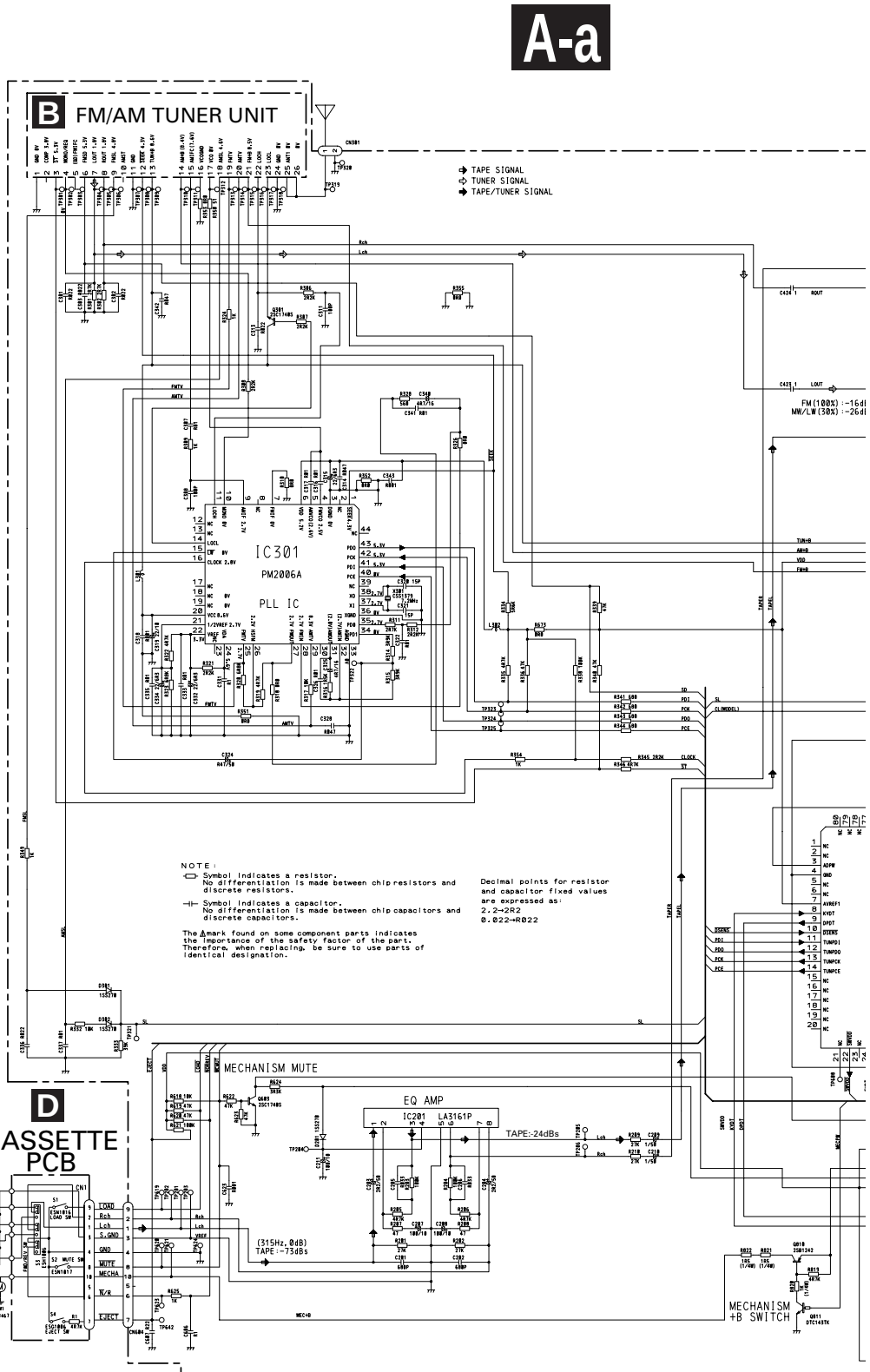
Mark	No.	Description	Part No.
	1	Screw	BSZ23P050FMC
	2	Washer	CBG1003
	3	Connector(CN1)	CKS2829
	4	Screw(M2x5)	EBA1038
	5	Screw(M2x2.5)	EBA1037
	6	Spring	EBH1554
	7	Spring	EBH1555
	8	Spring	EBH1556
	9	Spring	EBH1603
	10	Spring	EBH1591
	11	Spring	EBH1559
	12	Spring	EBH1593
	13	Spring	EBH1561
	14	Spring	EBH1562
	15	Spring	EBH1563
	16	Spring	EBH1590
	17	Spring	EBH1565
	18	Spring	EBH1566
	19	Spring	EBH1567
	20	Spring	EBH1568
	21	Spring	EBH1569
	22	Spring	EBH1571
	23	Spring	EBH1579
	24	Head Base	ENC1475
	25	Lever	ENC1429
	26	Lever	ENC1430
	27	Lever	ENC1431
	28	Lever	ENC1432
	29	Arm	ENC1433
	30	Arm	ENC1434
	31	Arm	ENC1480
	32	Arm	ENC1476
	33	Bracket	ENC1512
	34	Lever	ENC1523
	35	Arm	ENC1524
	36	Frame	ENC1440
	37	Holder	ENC1441
	38	Lever	ENC1446
	39	Lever	ENC1478
	40	Belt	ENT1027
	41	Gear	ENV1504
	42	Gear	ENV1470
	43	Gear	ENV1517
	44	Lever	ENV1472
	45	Gear	ENV1510
	46	Gear	ENV1475
	47	Gear	ENV1512
	48	Gear	ENV1513
	49	Gear	ENV1502
	50	Lever	ENV1480
	51	Lever	ENV1487
	52	Pinch Holder Unit	EXA1516
	53	Arm	ENV1519
*	54	PCB	ENP1161
	55	Switch(Eject)(S4)	ESG1006
	56	Switch(FWD)(REV)(S3)	ESH1006
	57	Switch(Load)(S1)	ESN1016
	58	Switch(Mute)(S2)	ESN1017
	59	Head Assy(HD1)	EXA1466
	60	Motor Unit(M1)	EXA1467
	61	Flywheel Unit	EXA1547
	62	•••••	
	63	Arm Unit	EXA1447
	64	Arm Unit	EXA1448
	65	Arm Unit	EXA1550
	66	Reel Unit	EXA1450
	67	Pinch Holder	ENV1466
	68	Pinch Roller	ENV1518
	69	Pinch Holder	ENV1467
	70	Pinch Holder Unit	EXA1515
	71	Chassis Unit	EXA1498
	72	Arm	ENV1524
	73	Washer	CBF-167
	74	Resistor(R1)	RD1/4HM472J
	75-78	•••••	
	79	Cover	ENC1452
	80	•••••	
	81	Spring	EBH1592
	82	Washer	CBF1051

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

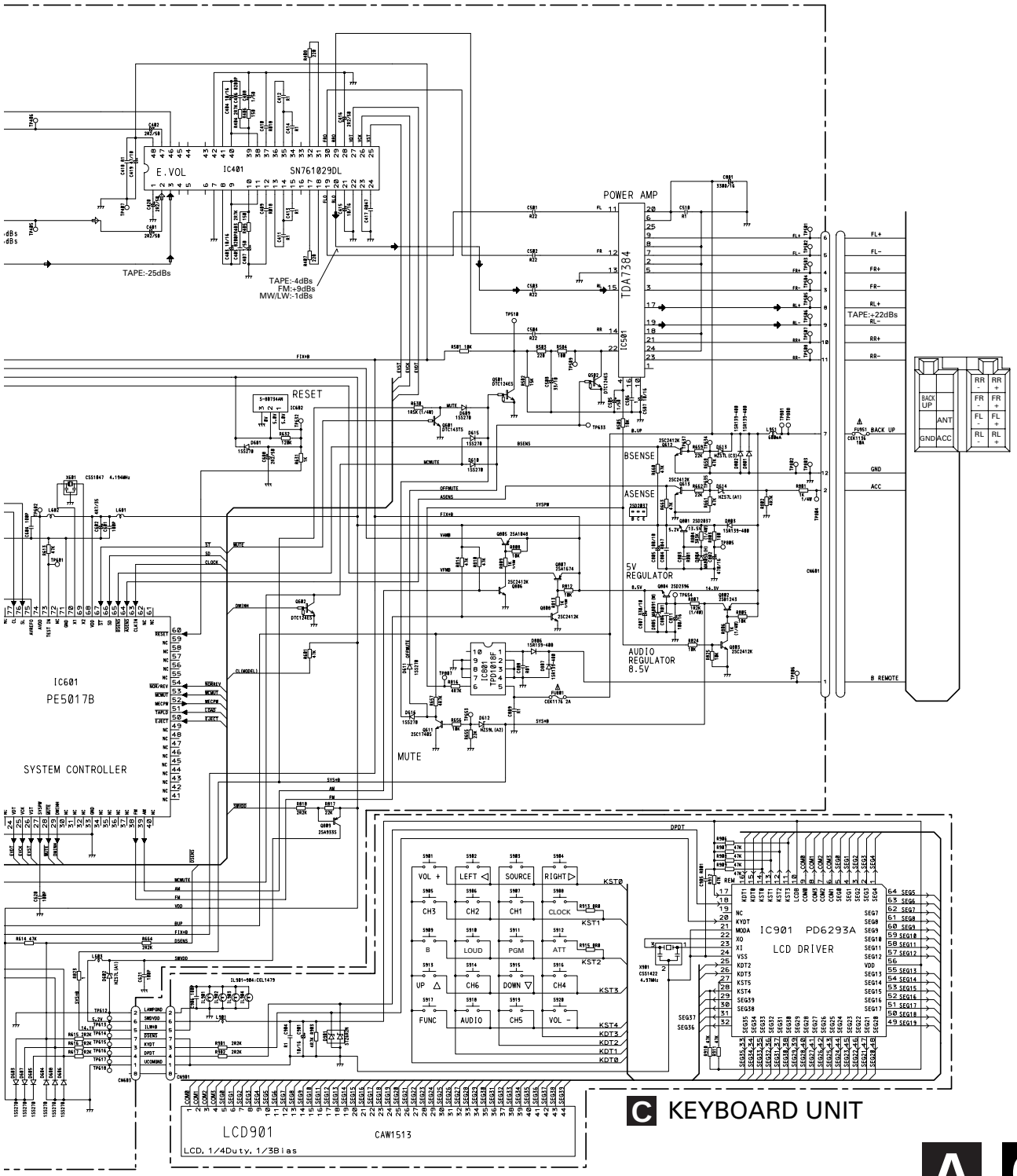
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



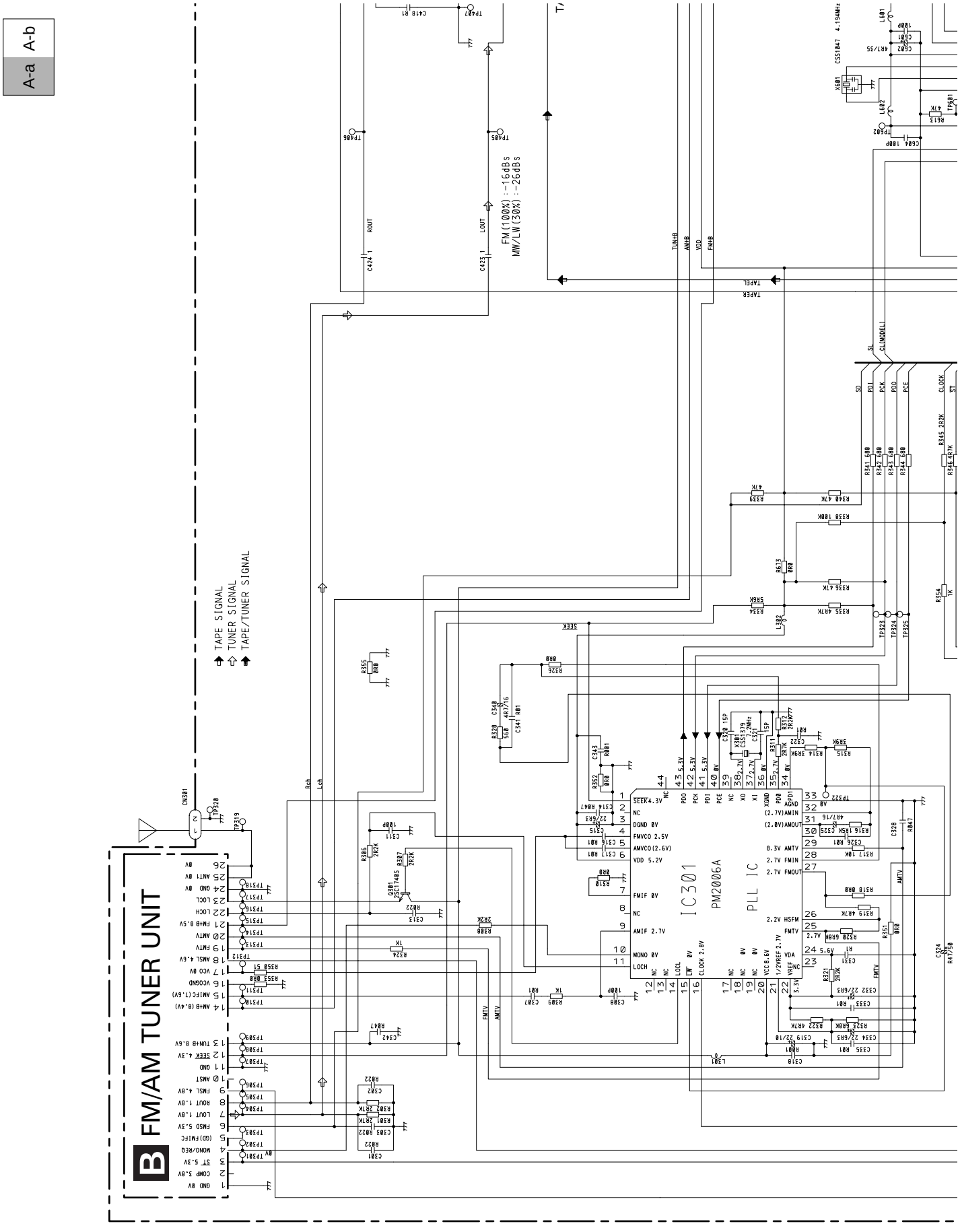


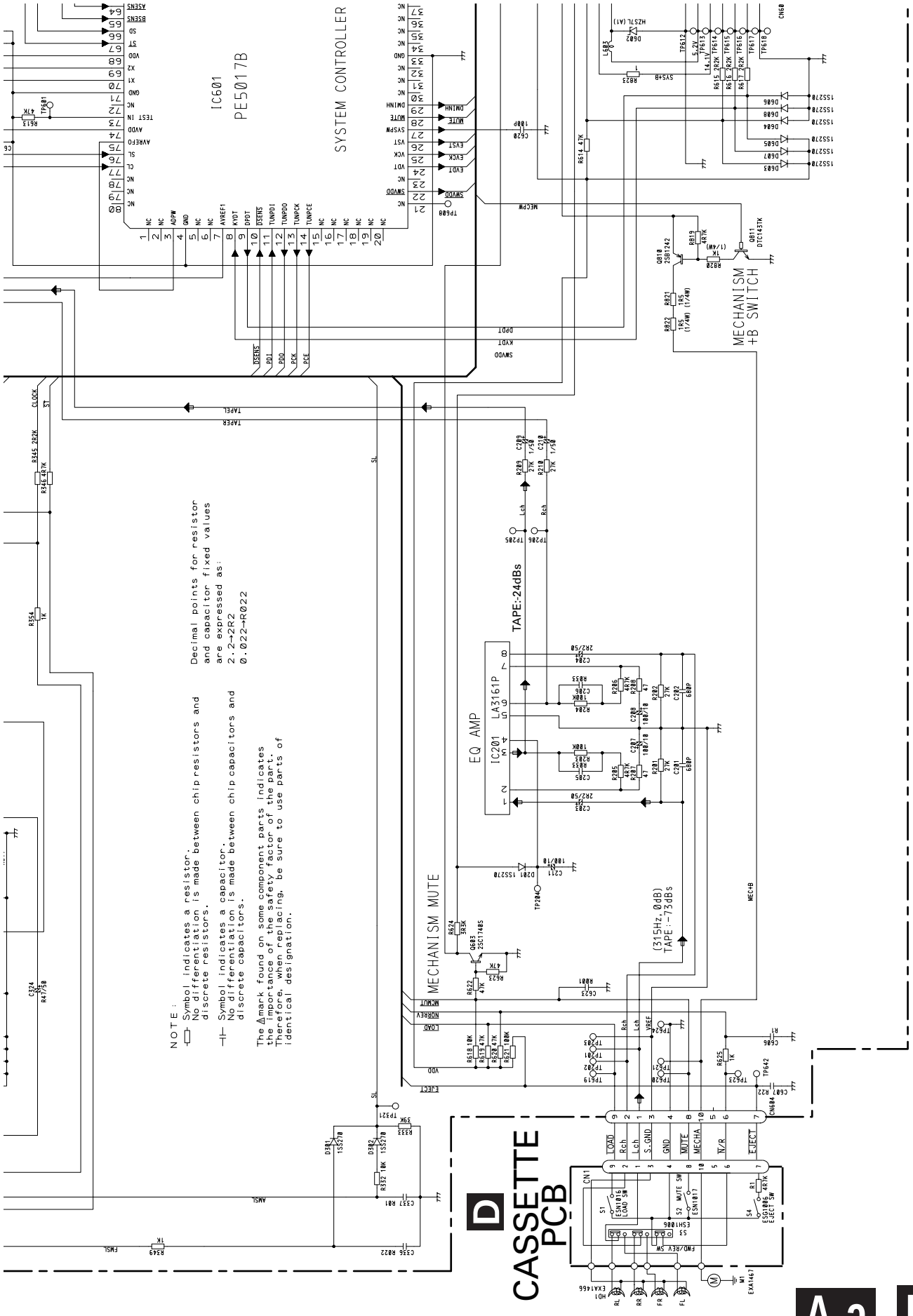
A-b

A TUNER AMP UNIT



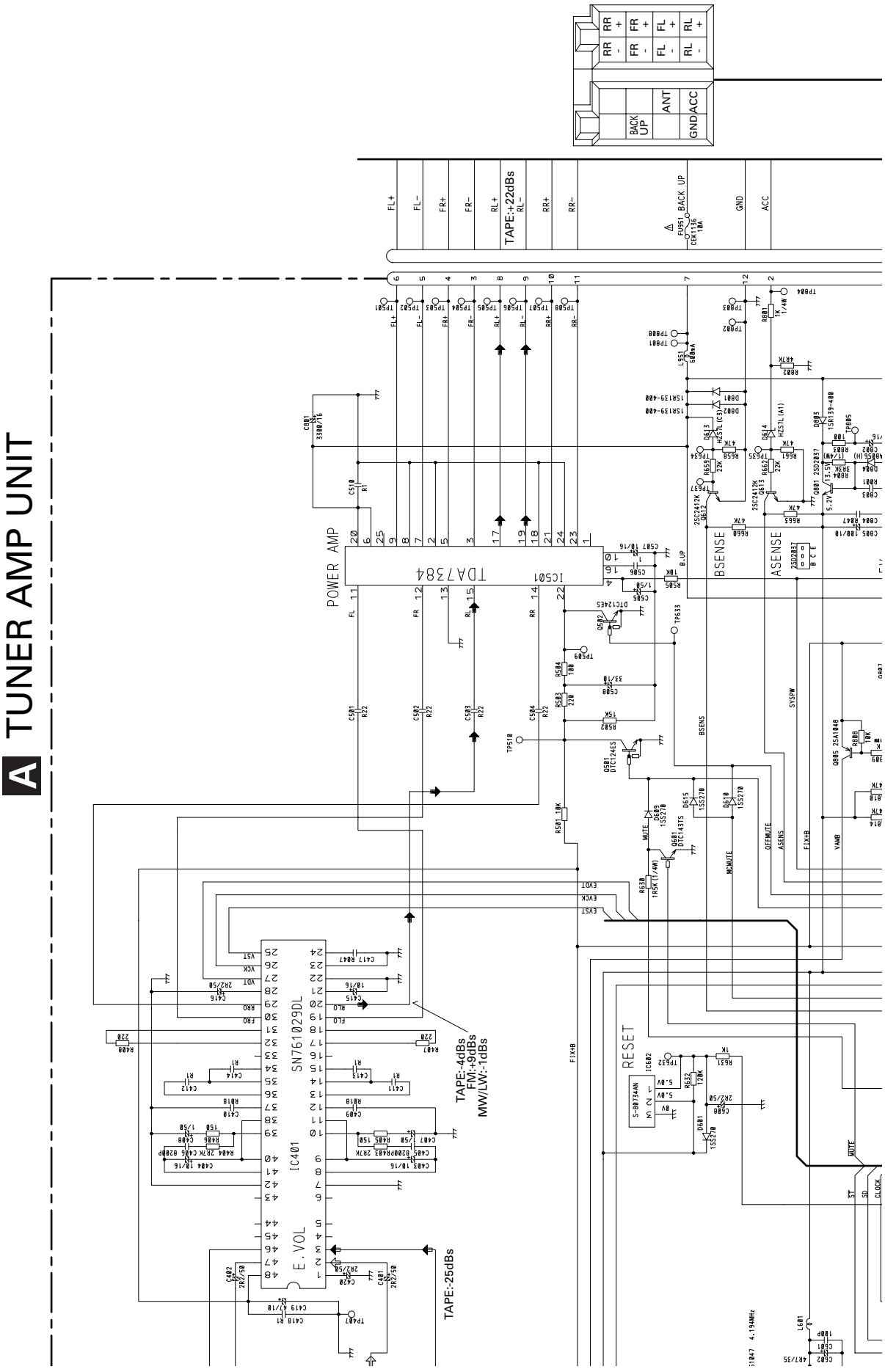
C KEYBOARD UNIT

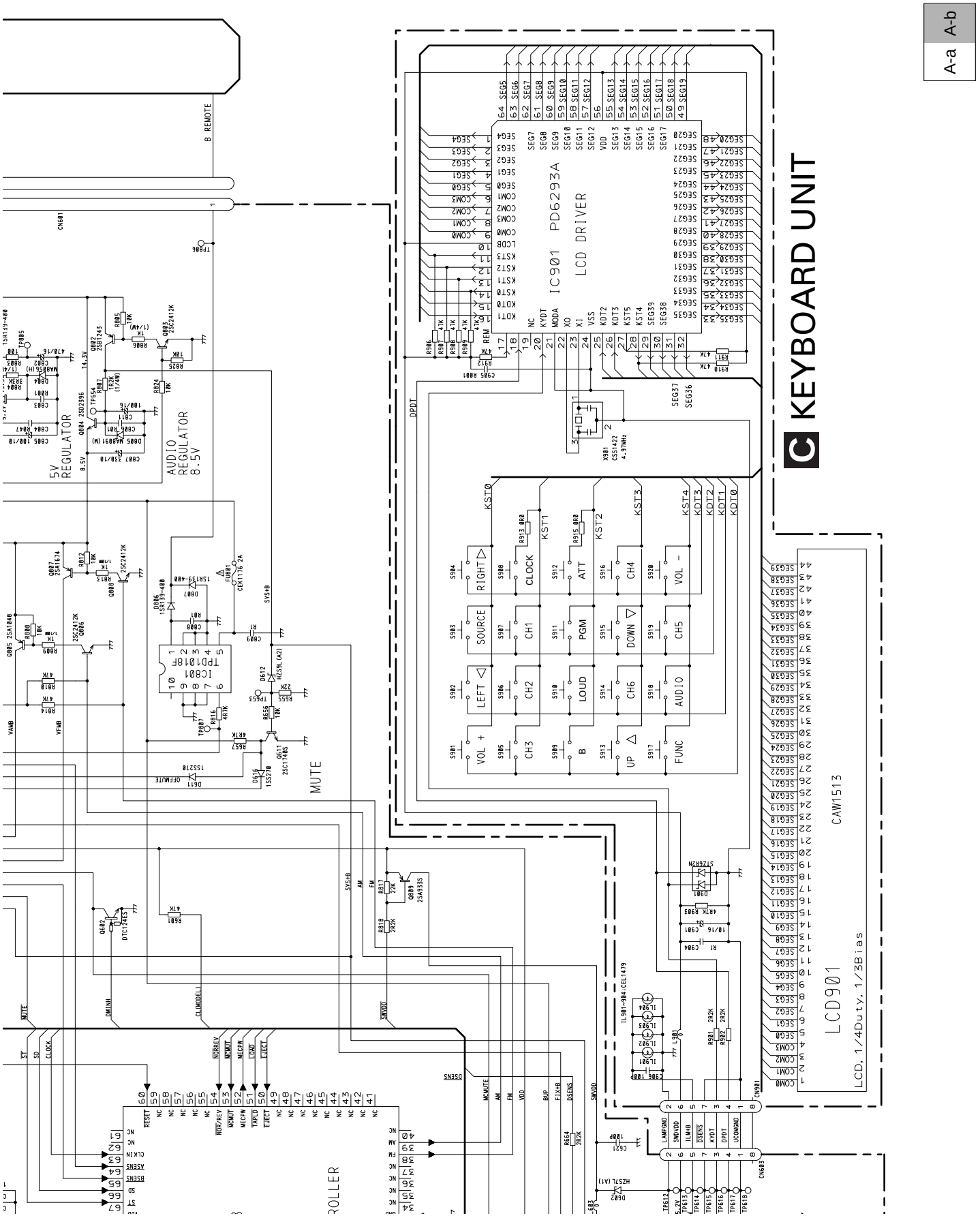

A-b
A-a
TAPE SIGNAL
TUNER SIGNAL
TAPE/TUNER SIGNAL
FM(100%) : -16dBs
MW/LW(30%) : -26dBs
B FM/AM TUNER UNIT
IC301
PM2006A
PLL IC


IC601
PE5017B
SYSTEM CONTROLLER
EQ AMP
IC201 LA3161P
TAPE:-24dBs
(315Hz 0dB)
TAPE:-73dBs
MECHANISM MUTE
MECHANISM +B SWITCH
CASSETTE PCB
CN1
LOAD
Rch
Lch
S.GND
GND
MUTE
MECHA
N/R
EJECT
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The Δmark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

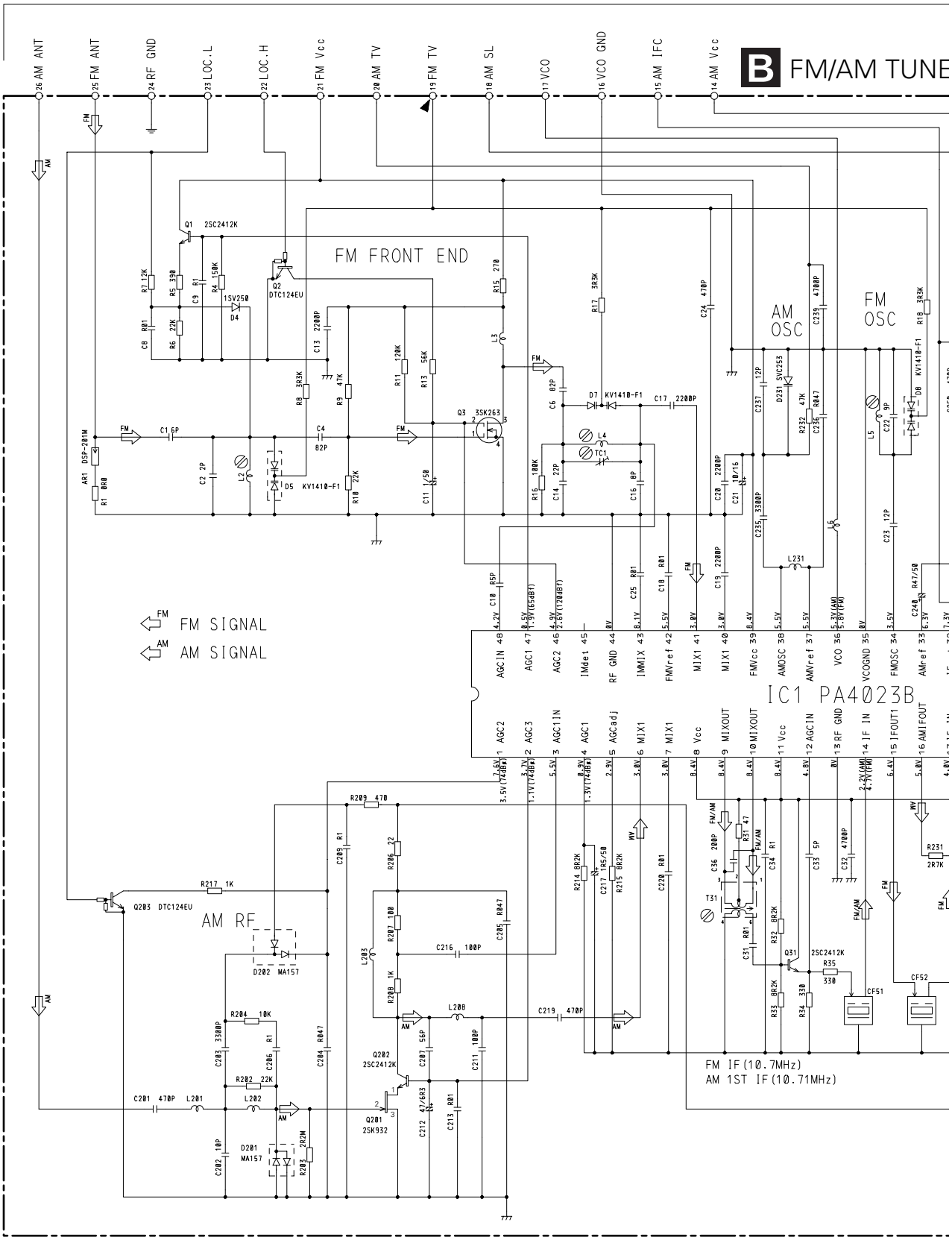
A-a D

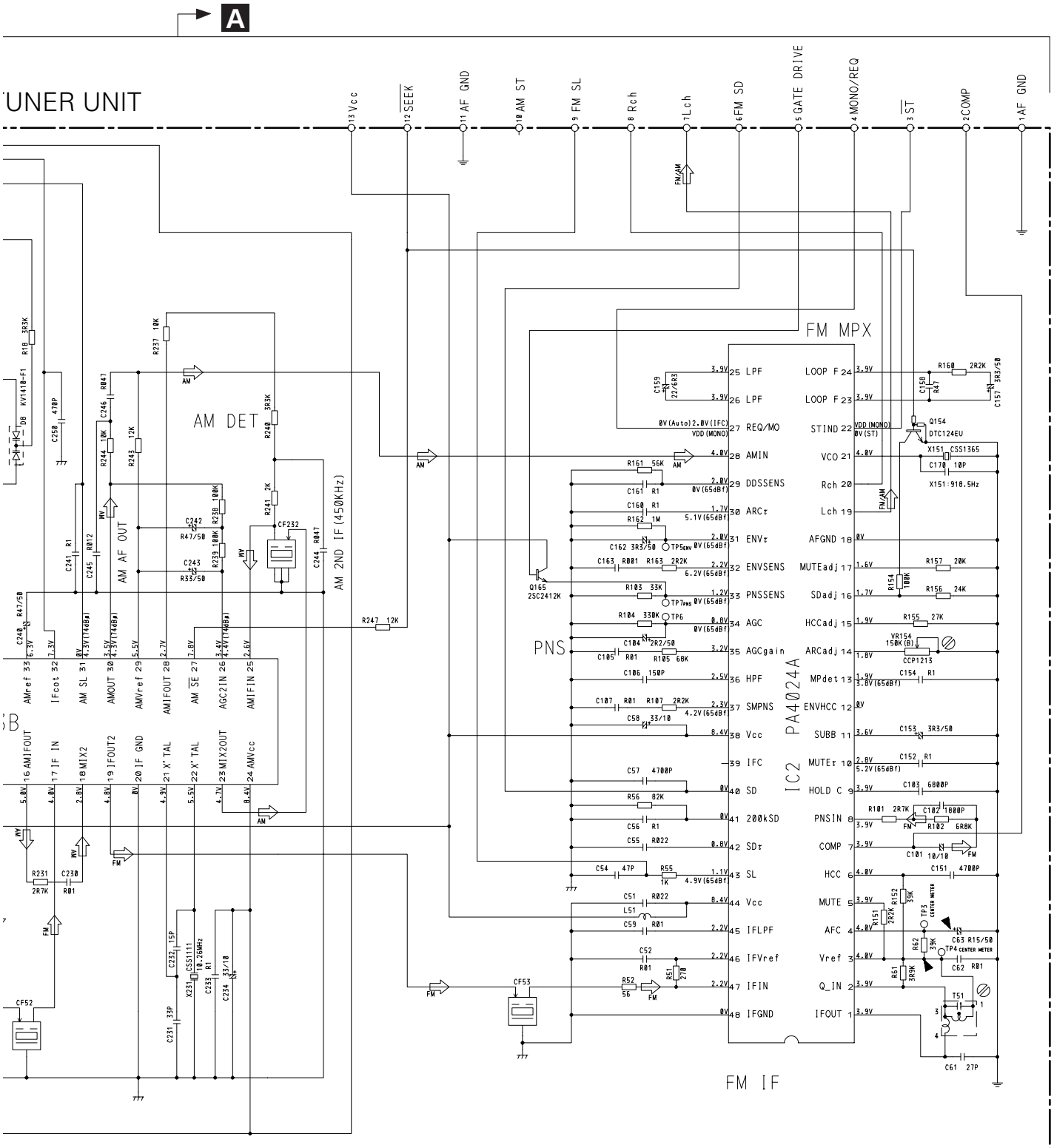
A-b
A-a


A TUNER AMP UNIT
POWER AMP
IC501
TDA7384
IC401
SN761029DL
E.VOL
RESET
TAPE:+22dBs
TAPE:-4dBs
FM:+9dBs
MW/LW:-1dBs
TAPE:-25dBs
BSENSE
ASENSE
FL+
FL-
FR+
FR-
RL+
RL-
RR+
RR-
GND
ACC
BACK UP
ANT


C KEYBOARD UNIT
IC901 PD6293A
LCD DRIVER
LCD901
CAW1513
LCD, 1/4Duty, 1/3Bias
5V REGULATOR
AUDIO REGULATOR 8.5V
MUTE
IC801 TPD1018F
X901 CSS1422 4.91MHz
RIGHT
LEFT
SOURCE
CLOCK
ATT
CH4
VOL -
CH1
PGM
DOWN
CH5
VOL +
CH2
LOUD
CH6
AUDIO
CH3
B
UP
FUNC
CN901
CN602
CN801

3.2 FM/AM TUNER UNIT



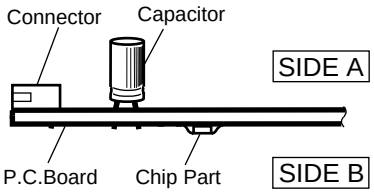

A
UNER UNIT
13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 GATE DRIVE
4 MONO/REQ
3 ST
2 COMP
1 AF GND
FM MPX
AM DET
AM AF OUT
AM 2ND IF (450KHz)
PNS
FM IF
IC2 PA4024A
LOOP F 24
LOOP F 23
STIND 22
VCO 21
Rch 20
Lch 19
AFGND 18
MUTEadj 17
SDadj 16
HCCadj 15
ARCadj 14
MPdet 13
ENVHCC 12
SUBB 11
MUTEr 10
HOLD C 9
PNSIN 8
COMP 7
HCC 6
MUTE 5
AFC 4
Vref 3
Q_IN 2
IFOUT 1
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCr
31 ENVr
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDr
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
AMref 33
IFcot 32
AM SL 31
AMOUT 30
AMVref 29
AMIFOUT 28
AM SE 27
AGC2IN 26
AMIFIN 25
16 AMIFOUT
17 IF IN
18 MIX2
19 IFOUT2
20 IF GND
21 X'TAL
22 X'TAL
23 MIX2OUT
24 AMVcc
Q154 DTC124EU
X151 CSS1365
X151:918.5Hz
Q165 2SC2412K
CF232
CF52
CF53
X231 CSS1111
10.26MHz
TP3 CENTER METER
TP4 CENTER METER
TP5env
TP7PNS
TP6
VR154 150K(B) CCP1213
T51
C61 27P
B
C
D

4. PCB CONNECTION DIAGRAM

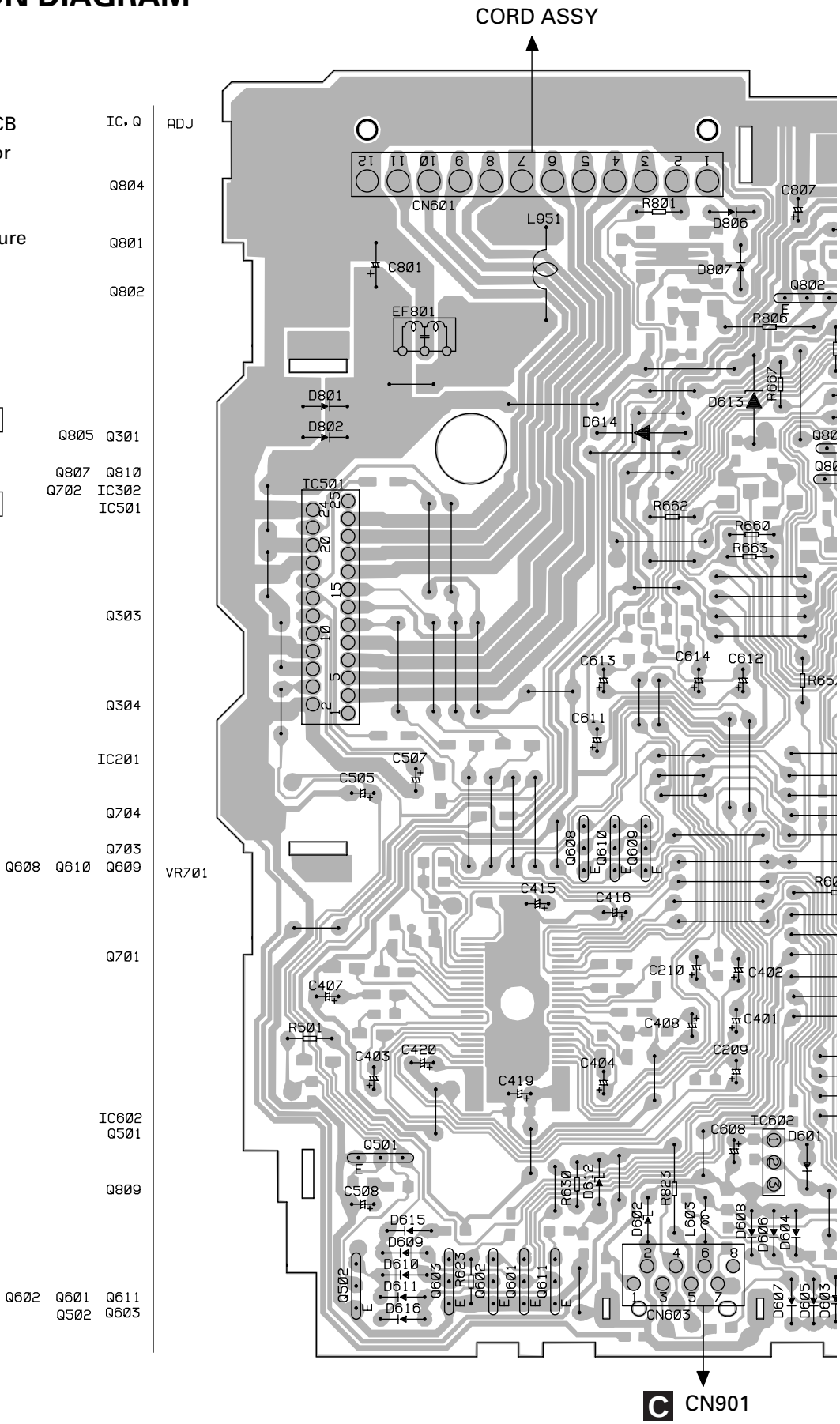
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

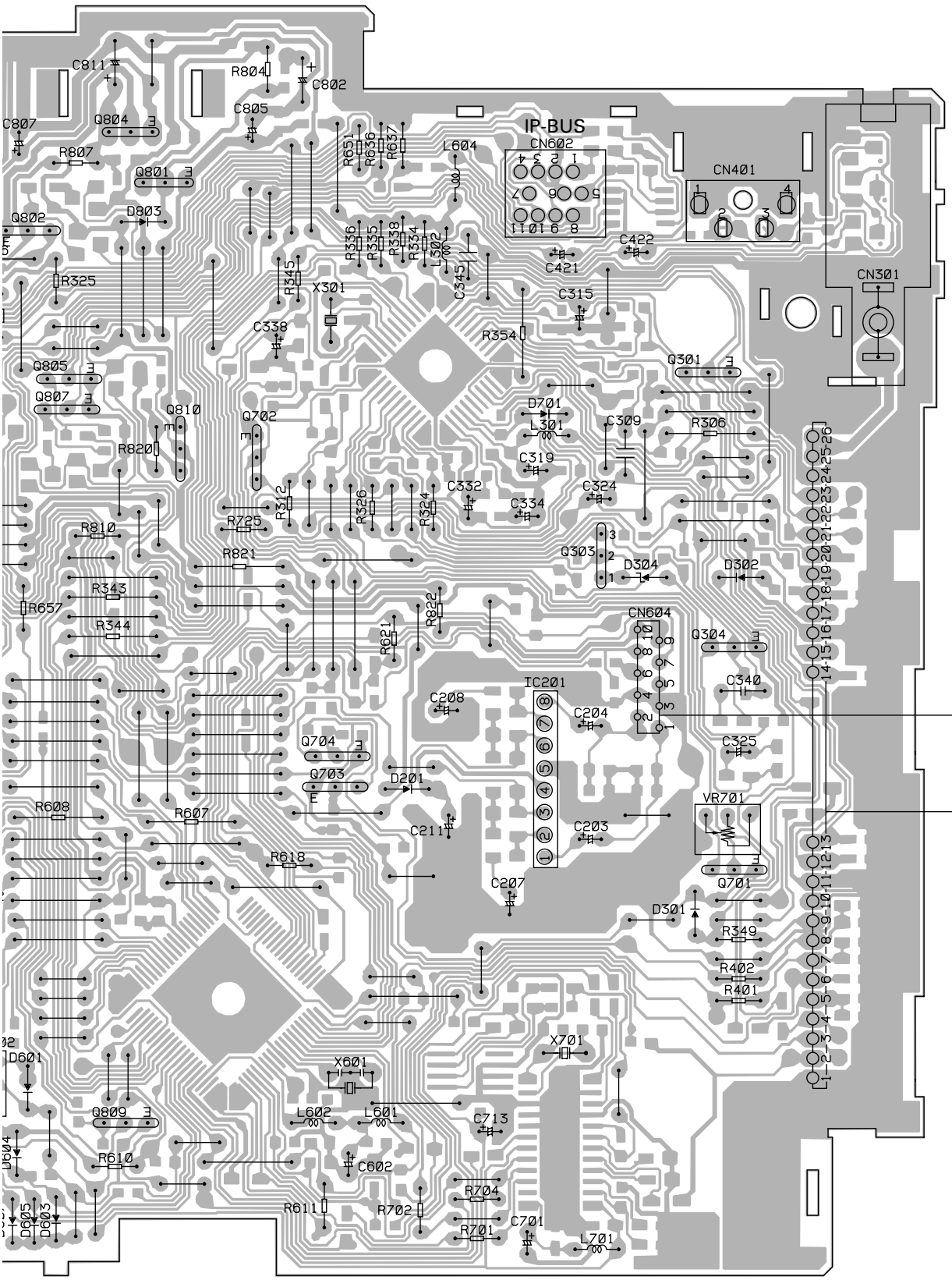
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



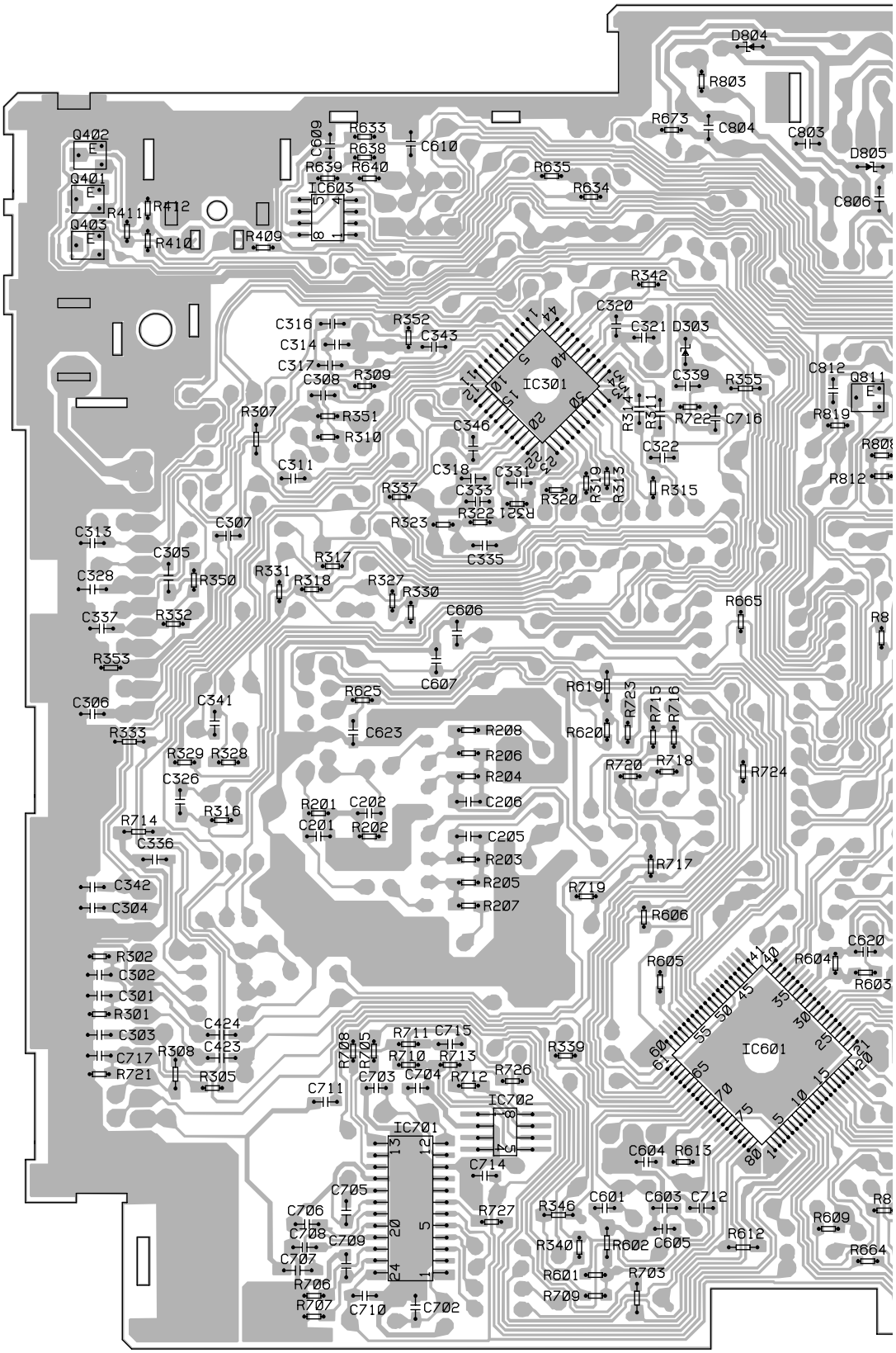
A TUNER AMP UNIT



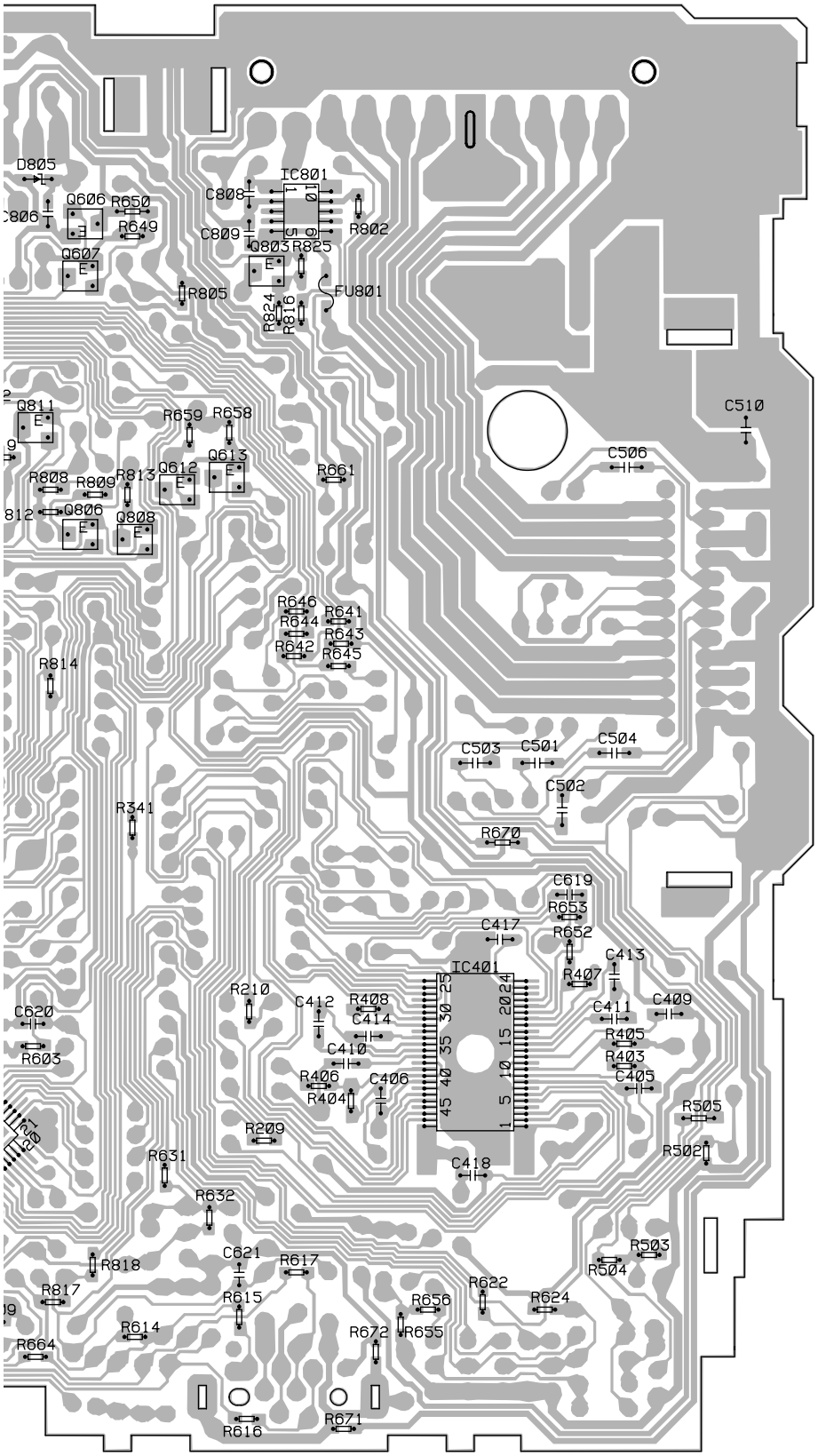
SIDE A


IP-BUS
CN602
CN401
CN301
CN604
IC201
VR701
X701
X601
X301
L604
L602
L601
L301
L701
C811
C802
C807
C805
C804
C801
C422
C421
C315
C338
C345
C309
C319
C332
C334
C324
C340
C325
C208
C204
C211
C203
C207
C713
C602
C701
R804
R807
R651
R636
R637
R335
R338
R354
R345
R325
R306
R312
R326
R324
R725
R810
R820
R821
R343
R657
R344
R822
R621
R608
R607
R618
R610
R611
R702
R704
R701
R349
R402
R401
Q804
Q801
Q802
Q805
Q807
Q810
Q702
Q703
Q704
Q301
Q303
Q304
Q701
Q809
D803
D701
D304
D302
D201
D301
D601
D605
D603
D604
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
D CN1
B

A TUNER AMP UNIT



SIDE B



IC, Q

Q402

IC801 Q606
Q401 IC603

Q403
Q607 Q803

Q811
IC301

Q613
Q612

Q806 Q808

IC401

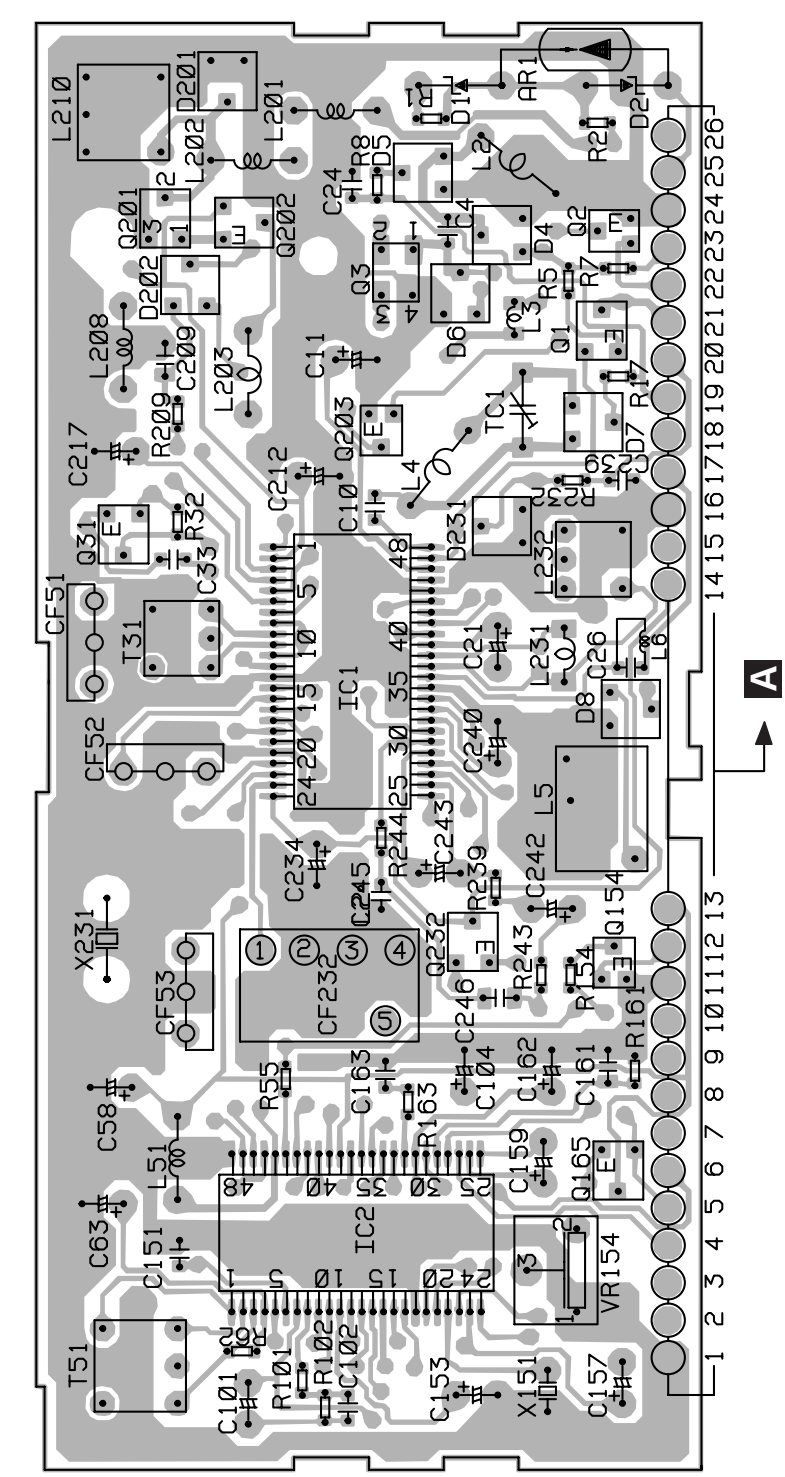
IC601

IC702
IC701

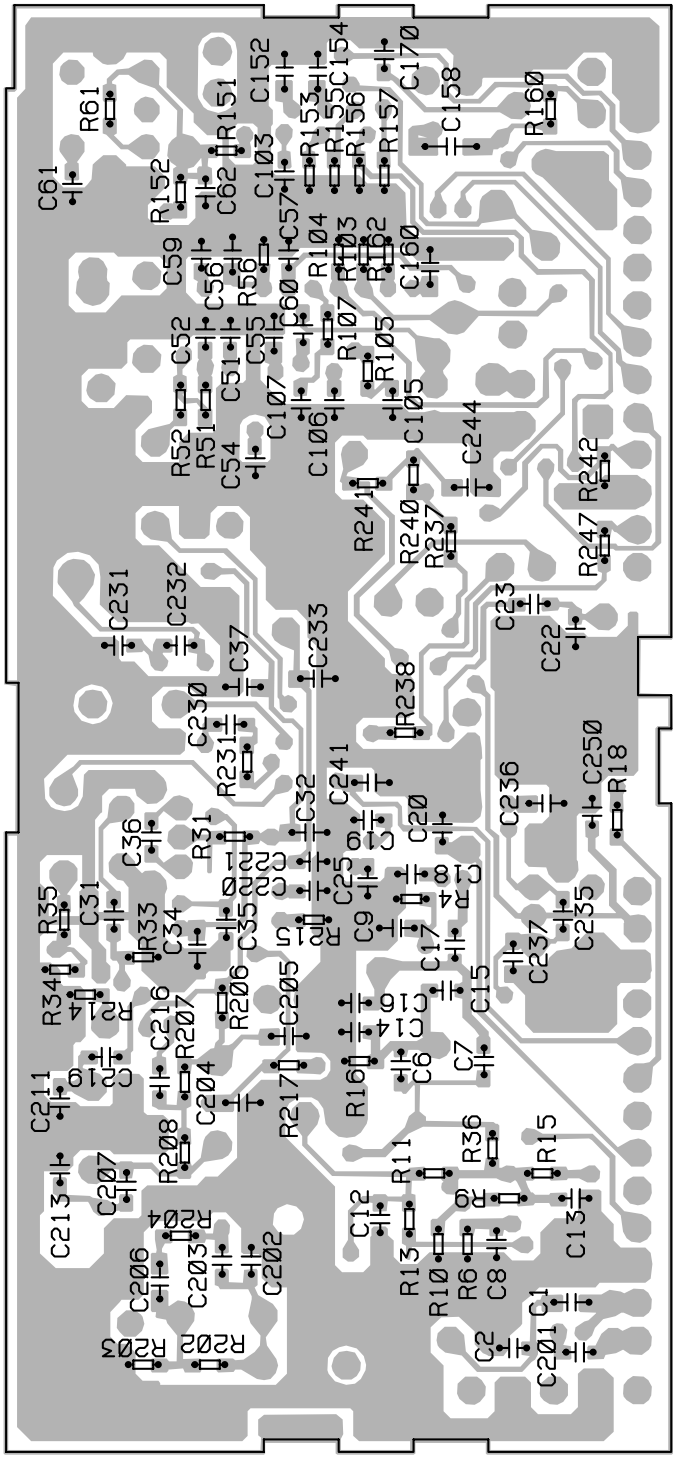
A
B
C
D

4.2 FM/AM TUNER UNIT

SIDE A



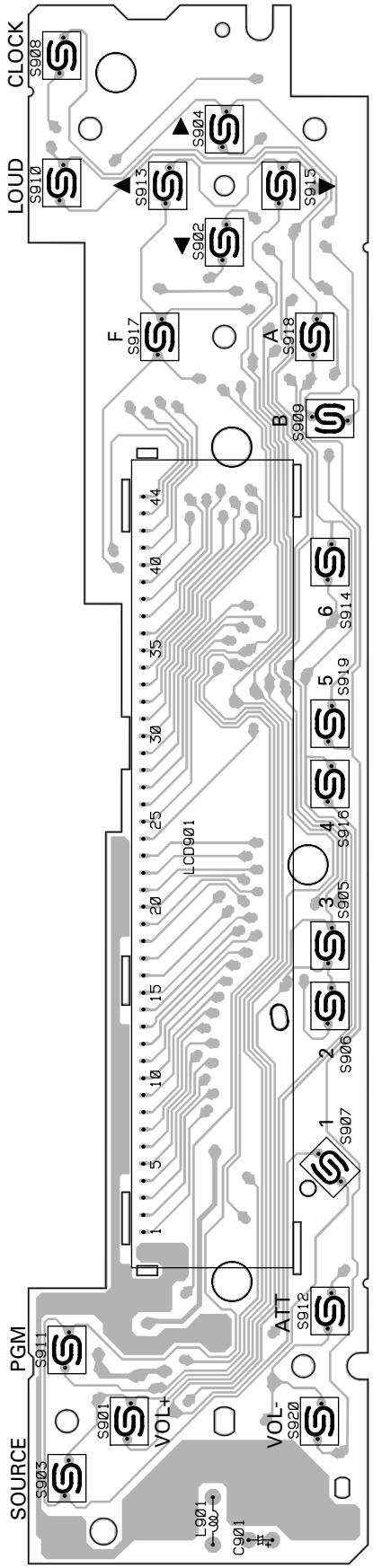
SIDE B



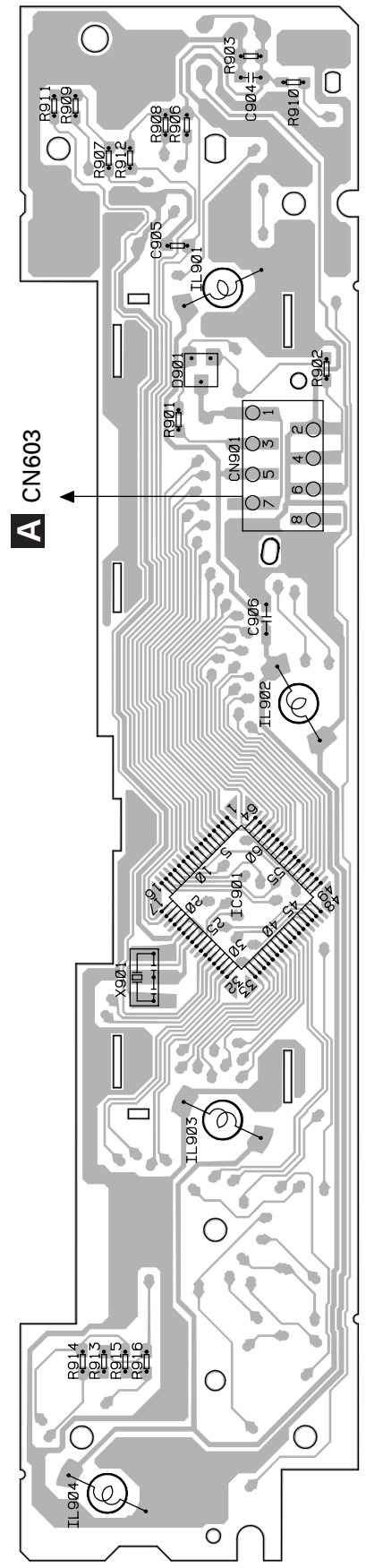
B FM/AM TUNER UNIT

4.3 KEYBOARD UNIT

SIDE A



SIDE B

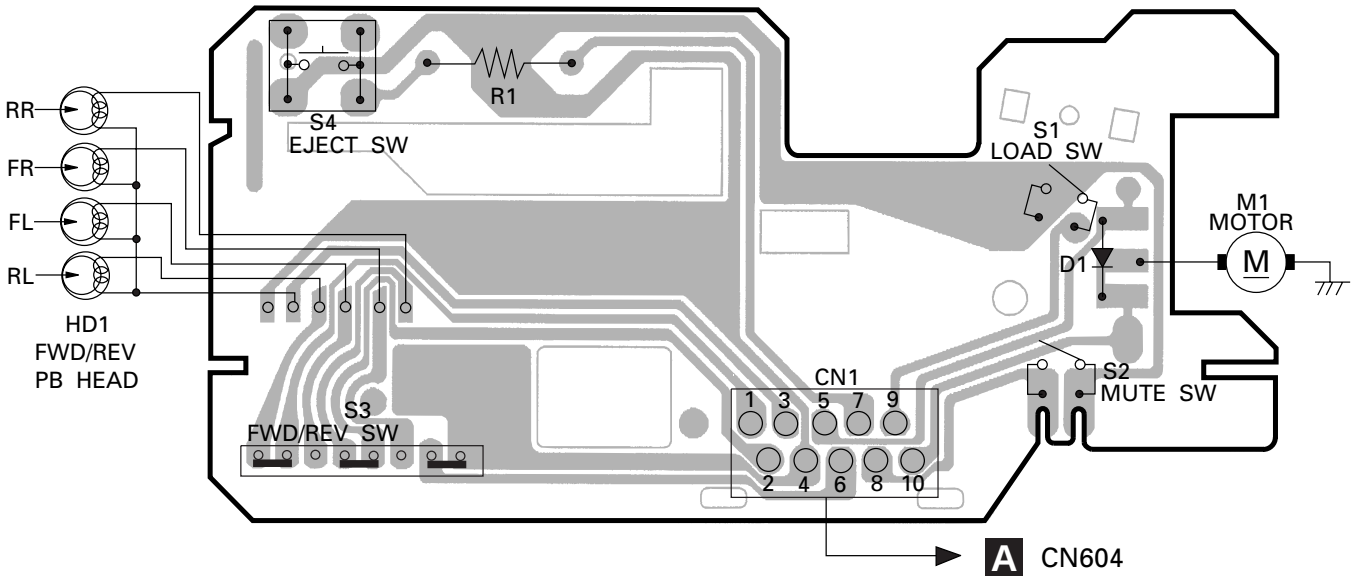


C KEYBOARD UNIT

C KEYBOARD UNIT

4.4 CASSETTE MECHANISM ASSY

D CASSETTE PCB



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A Unit Number : CWM6351
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC	201	IC	LA3161P
IC	301	IC	PM2006A
IC	401	IC	SN761029DL
IC	501	IC	TDA7384
IC	601	IC	PE5017B
IC	602	IC	S-80734AN
IC	801	IC	TPD1018F
Q	301	Transistor	2SC1740S
Q	501	Transistor	DTC124ES
Q	502	Transistor	DTC124ES
Q	601	Transistor	DTC143TS
Q	602	Transistor	DTC124ES
Q	603	Transistor	2SC1740S
Q	611	Transistor	2SC1740S
Q	612	Transistor	2SC2412K
Q	613	Transistor	2SC2412K
Q	801	Transistor	2SD2037
Q	802	Transistor	2SB1243
Q	803	Transistor	2SC2412K
Q	804	Transistor	2SD2396
Q	805	Transistor	2SA1048
Q	806	Transistor	2SC2412K
Q	807	Transistor	2SA1674
Q	808	Transistor	2SC2412K
Q	809	Transistor	2SA933S
Q	810	Transistor	2SB1242
Q	811	Transistor	DTC143TK
D	201	Diode	1SS270
D	301	Diode	1SS270
D	302	Diode	1SS270
D	601	Diode	1SS270
D	602	Diode	HZS7L(A1)
D	603	Diode	1SS270
D	604	Diode	1SS270
D	605	Diode	1SS270
D	606	Diode	1SS270
D	607	Diode	1SS270
D	608	Diode	1SS270
D	609	Diode	1SS270
D	610	Diode	1SS270
D	611	Diode	1SS270
D	612	Diode	HZS9L(A2)
D	613	Diode	HZS7L(C3)
D	614	Diode	HZS7L(A1)
D	615	Diode	1SS270
D	616	Diode	1SS270
D	801	Diode	1SR139-400
D	802	Diode	1SR139-400
D	803	Diode	1SR139-400
D	804	Diode	MA8056(H)
D	805	Diode	MA8091(M)
D	806	Diode	1SR139-400
D	807	Diode	1SR139-400
L	301	Ferri-Inductor	LAU101K
L	302	Ferri-Inductor	LAU2R2K
L	601	Ferri-Inductor	LAU101K
L	602	Ferri-Inductor	LAU101K
L	603	Ferri-Inductor	LAU101K
L	951	Choke Coil 600mH	CTH1168
X	301	Crystal Resonator 7.200MHz	CSS1379
X	601	Ceramic Resonator 4.194MHz	CSS1047
FU	801	Fuse 2A	CEK1176
		FM/AM Tuner Unit	CWE1466

RESISTORS

R	201	RS1/10S273J
R	202	RS1/10S273J
R	203	RS1/10S104J
R	204	RS1/10S104J
R	205	RS1/10S472J
R	206	RS1/10S472J
R	207	RS1/10S470J
R	208	RS1/10S470J
R	209	RS1/10S273J
R	210	RS1/10S273J
R	301	RS1/10S272J
R	302	RS1/10S272J
R	305	RS1/10S0R0J
R	306	RD1/4PU222J
R	307	RS1/8S222J
R	308	RS1/8S222J
R	309	RS1/10S102J
R	310	RS1/10S0R0J
R	311	RS1/8S272J
R	312	RD1/4PU222J
R	314	RS1/8S392J
R	315	RS1/10S392J
R	316	RS1/10S152J
R	317	RS1/10S103J
R	318	RS1/10S0R0J
R	319	RS1/10S472J
R	320	RS1/10S682J
R	321	RS1/10S222J
R	322	RS1/10S472J
R	323	RS1/10S682J
R	324	RD1/4PU102J
R	326	RD1/4PU0R0J
R	328	RS1/10S561J
R	332	RS1/10S103J
R	333	RS1/8S393J
R	334	RD1/4PU562J
R	335	RD1/4PU472J
R	336	RD1/4PU473J
R	338	RD1/4PU104J
R	339	RS1/10S473J

=====Circuit Symbol and No.		===Part Name	Part No.
R	340		RS1/10S473J
R	341		RS1/10S681J
R	342		RS1/10S681J
R	343		RD1/4PU681J
R	344		RD1/4PU681J
R	345		RD1/4PU222J
R	346		RS1/8S472J
R	349		RD1/4PU102J
R	350		RS1/10S510J
R	351		RS1/10S0R0J
R	352		RS1/10S0R0J
R	353		RS1/10S0R0J
R	354		RD1/4PU102J
R	355		RS1/8S0R0J
R	403		RS1/10S272J
R	404		RS1/10S272J
R	405		RS1/10S151J
R	406		RS1/10S151J
R	407		RS1/10S221J
R	408		RS1/10S221J
R	501		RD1/4PU103J
R	502		RS1/10S153J
R	503		RS1/10S221J
R	504		RS1/10S101J
R	505		RS1/8S103J
R	601		RS1/10S473J
R	613		RS1/10S473J
R	614		RS1/10S473J
R	615		RS1/10S222J
R	616		RS1/10S222J
R	617		RS1/10S222J
R	618		RD1/4PU103J
R	619		RS1/8S473J
R	620		RS1/10S473J
R	621		RD1/4PU104J
R	622		RS1/10S473J
R	623		RD1/4PU473J
R	624		RS1/10S332J
R	625		RS1/10S102J
R	630		RD1/4PU152J
R	631		RS1/10S102J
R	632		RS1/10S124J
R	655		RS1/10S223J
R	656		RS1/10S103J
R	657		RD1/4PU472J
R	658		RS1/10S473J
R	659		RS1/10S223J
R	660		RD1/4PU473J
R	661		RS1/10S473J
R	662		RD1/4PU223J
R	663		RD1/4PU473J
R	664		RS1/10S222J
R	673		RS1/10S0R0J
R	801		RD1/4PU102J
R	802		RS1/10S472J
R	803		RS1/10S101J
R	804		RD1/4PU332J
R	805		RS1/10S103J
R	806		RD1/4PU102J
R	807		RD1/4PU122J
R	808		RS1/10S103J
R	809		RS1/10S102J
R	810		RD1/4PU473J
R	812		RS1/10S103J
R	813		RS1/10S102J

=====Circuit Symbol and No.		===Part Name	Part No.
R	814		RS1/10S473J
R	816		RS1/10S472J
R	817		RS1/10S223J
R	818		RS1/10S222J
R	819		RS1/10S472J
R	820		RD1/4PU102J
R	821		RD1/4PU1R5J
R	822		RD1/4PU1R5J
R	823		RD1/4PU1R0J
R	824		RS1/10S103J
R	825		RS1/10S103J
CAPACITORS			
C	201		CKSQYB681K50
C	202		CKSQYB681K50
C	203		CEJA2R2M50
C	204		CEJA2R2M50
C	205		CKSQYB333K50
C	206		CKSQYB333K50
C	207		CEJA101M10
C	208		CEJA101M10
C	209		CEJA1R0M50
C	210		CEJA1R0M50
C	211		CEJA101M10
C	301		CKSQYB223K50
C	302		CKSQYB223K50
C	303		CKSQYB223K50
C	307		CKSQYB103K50
C	308		CCSQCH101J50
C	311		CCSQCH101J50
C	313		CKSQYB223K50
C	314		CKSQYB473K50
C	315		CEJA220M6R3
C	316		CKSQYB103K50
C	317		CKSQYB103K50
C	318		CKSQYB102K50
C	319		CEJA220M10
C	320		CCSQCH150J50
C	321		CCSQCH150J50
C	322		CKSQYB103K50
C	324		CEJAR47M50
C	325	4.7µF/16V	CCH1250
C	326		CKSQYB103K50
C	328		CKLSR473K16
C	331		CKSQYB104K16
C	332		CEJA220M6R3
C	333		CKSQYB103K50
C	334		CEJA220M6R3
C	335		CKSQYB103K50
C	336		CKSQYB223K50
C	337		CKSQYB103K50
C	340	4.7µF/16V	CCH1165
C	341		CKSQYB103K50
C	342		CKSQYB473K50
C	343		CKSQYB102K50
C	401		CEJA2R2M50
C	402		CEJA2R2M50
C	403		CEJA100M16
C	404		CEJA100M16
C	405		CKSQYB822K50
C	406		CKSQYB822K50
C	407		CEJA1R0M50
C	408		CEJA1R0M50
C	409		CKSQYB183K50
C	410		CKSQYB183K50
C	411		CKSQYB104K16
C	412		CKSQYB104K16
C	413		CKSQYB104K16

=====Circuit Symbol and No.	===	Part Name	Part No.
C	414		CKSQYB104K16
C	415		CEJA100M16
C	416		CEJA2R2M50
C	417		CKSQYB473K50
C	418		CKSQYB104K16
C	419		CEJA470M10
C	420		CEJA2R2M50
C	423		CKSYB105K16
C	424		CKSYB105K16
C	501		CKSYB224K16
C	502		CKSYB224K16
C	503		CKSYB224K16
C	504		CKSYB224K16
C	505		CEJA1R0M50
C	506		CKSYB105K16
C	507		CEJA100M16
C	508		CEJA330M10
C	510		CKSQYB104K16
C	601		CCSQCH101J50
C	602		CEJA4R7M35
C	604		CCSQCH101J50
C	606		CKSQYB104K16
C	607		CKSQYB224K16
C	608		CEJA2R2M50
C	620		CCSQCH101J50
C	621		CCSQCH101J50
C	623		CKSQYB102K50
C	801	3300µF/16V	CCH1018
C	802	470µF/16V	CCH1183
C	803		CKSQYB102K50
C	804		CKSQYB473K50
C	805		CEJA101M10
C	806		CKSQYB103K50
C	807	330µF/10V	CCH1181
C	808		CKSQYB103K50
C	809		CKSQYB104K16
C	811	100µF/16V	CCH1179

C Unit Number : CWM6273(KEH-1800/X1M/EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	PD6293A
D	901	Diode	STZ6R2N
L	901	Ferri-Inductor	LAU101K
X	901	Ceramic Resonator 4.97MHz	CSS1422
IL	901	Lamp 14V 40mA	CEL1547
IL	902	Lamp 14V 40mA	CEL1547
IL	903	Lamp 14V 40mA	CEL1547
IL	904	Lamp 14V 40mA	CEL1547
LCD	901	LCD	CAW1513

RESISTORS

R	901	RS1/10S222J
R	902	RS1/10S222J
R	903	RS1/10S472J
R	906	RS1/10S473J
R	907	RS1/10S473J
R	908	RS1/10S473J
R	909	RS1/10S473J
R	910	RS1/10S473J
R	911	RS1/10S473J
R	912	RS1/10S473J
R	913	RS1/10S0R0J
R	915	RS1/10S0R0J

=====Circuit Symbol and No.	===	Part Name	Part No.

CAPACITORS

C	901	CEAL100M16
C	904	CKSQYB104K16
C	905	CKSQYB102K50
C	906	CCSCH101J50

C Unit Number : CWM6275(KEH-1830/X1M/EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	901	IC	PD6293A
D	901	Diode	STZ6R2N
L	901	Ferri-Inductor	LAU101K
X	901	Ceramic Resonator 4.97MHz	CSS1422
IL	901	Lamp 8V 100mA	CEL1479
IL	902	Lamp 8V 100mA	CEL1479
IL	903	Lamp 8V 100mA	CEL1479
IL	904	Lamp 8V 100mA	CEL1479
LCD	901	LCD	CAW1513

RESISTORS

R	901	RS1/10S222J
R	902	RS1/10S222J
R	903	RS1/10S472J
R	906	RS1/10S473J
R	907	RS1/10S473J
R	908	RS1/10S473J
R	909	RS1/10S473J
R	910	RS1/10S473J
R	911	RS1/10S473J
R	912	RS1/10S473J
R	913	RS1/10S0R0J
R	915	RS1/10S0R0J

CAPACITORS

C	901	CEAL100M16
C	904	CKSQYB104K16
C	905	CKSQYB102K50
C	906	CCSCH101J50

B Unit Number : CWE1466
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412K
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412K
Q	154	Transistor	DTC124EU
Q	165	Transistor	2SC2412K
Q	201	FET	2SK932
Q	202	Transistor	2SC2412K
Q	203	Transistor	DTC124EU
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
D	201	Diode	MA157
D	202	Diode	MA157
D	231	Diode	SVC253
L	2	Coil	CTC1133
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1133
L	5	Coil	CTC1132
L	6	Inductor	LCTBR15K1608
L	51	Ferri-Inductor	LAU150K
L	201	Ferri-Inductor	LAU4R7K

=====Circuit Symbol and No.		===Part Name	Part No.
L	202	Ferri-Inductor	LAU330K
L	203	Inductor	CTF1287
L	208	Inductor	LAU121K
L	231	Inductor	LCTA3R3J3225
T	31	Coil	CTE1116
T	51	Coil	CTC1136
TC	1	Trimmer	CCL1046
CF	51	Ceramic Filter	CTF1442
CF	52	Ceramic Filter	CTF1442
CF	53	Ceramic Filter	CTF1442
CF	232	Ceramic Filter	CTF1348
X	151	Radiator 918.5Hz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213
AR	1	Capacitor with Discharge Gap	DSP-201M

RESISTORS

R	1		RS1/16S0R0J
R	4		RS1/16S154J
R	5		RS1/16S391J
R	6		RS1/16S223J
R	7		RS1/16S123J
R	8		RS1/16S332J
R	9		RS1/16S473J
R	10		RS1/16S223J
R	11		RS1/16S124J
R	13		RS1/16S563J
R	15		RS1/16S271J
R	16		RS1/16S104J
R	17		RS1/16S332J
R	18		RS1/16S332J
R	31		RS1/16S470J
R	32		RS1/16S822J
R	33		RS1/16S822J
R	34		RS1/16S331J
R	35		RS1/16S331J
R	51		RS1/16S271J
R	52		RS1/16S560J
R	55		RS1/16S102J
R	56		RS1/16S823J
R	61		RS1/16S392J
R	62		RS1/16S393J
R	101		RS1/16S272J
R	102		RS1/16S682J
R	103		RS1/16S333J
R	104		RS1/16S334J
R	105		RS1/16S683J
R	107		RS1/16S222J
R	151		RS1/16S222J
R	152		RS1/16S393J
R	154		RS1/16S104J
R	155		RS1/16S273J
R	156		RS1/16S243J
R	157		RS1/16S203J
R	160		RS1/16S222J
R	161		RS1/16S563J
R	162		RS1/16S105J
R	163		RS1/16S222J
R	202		RS1/16S223J
R	203		RS1/16S225J
R	204		RS1/16S103J
R	206		RS1/16S220J
R	207		RS1/16S101J
R	208		RS1/16S102J
R	209		RS1/16S471J
R	214		RS1/16S822J
R	215		RS1/16S822J
R	217		RS1/16S102J
R	231		RS1/16S272J
R	232		RS1/16S473J
R	237		RS1/16S103J
R	238		RS1/16S104J
R	239		RS1/16S104J
R	240		RS1/16S332J
R	241		RS1/16S202J
R	243		RS1/16S123J
R	244		RS1/16S103J
R	247		RS1/16S123J

CAPACITORS

C	1		CCSQCH6R0D50
C	2		CCSRCK2R0C50
C	4		CCSRCH820J50
C	6		CCSRCH820J50
C	8		CKSRYB103K25
C	9		CKSQYB104K16
C	10		CCSRCKR50C50
C	11		CEJA1R0M50
C	13		CKSRYB222K50
C	14		CCSRCH220J50
C	16		CCSRCH8R0D50
C	17		CKSRYB222K50
C	18		CKSRYB103K25
C	19		CKSRYB222K50
C	20		CKSRYB222K50
C	21		CEJA100M16
C	22		CCSRTH9R0D50
C	23		CCSRTH120J50
C	24		CCSRCH471J50
C	25		CKSRYB103K25
C	31		CKSRYB103K25
C	32		CKSQYB472K50
C	33		CCSRCH5R0C50
C	34		CKSQYB104K16
C	36		CCSRRH201J50
C	51		CKSRYB223K25
C	52		CKSRYB103K25
C	54		CCSRCH470J50
C	55		CKSQYB223K25
C	56		CKSQYB104K16
C	57		CKSRYB472K50
C	58		CEJA330M10
C	59		CKSRYB103K25
C	61		CCSRCH270J50
C	62		CKSRYB103K25
C	63		CEJAR15M50
C	101		CEJANP100M10
C	102		CKSRYB182K50
C	103		CKSRYB682K25
C	104		CEJA2R2M50
C	105		CKSRYB103K25
C	106		CCSRCH151J50
C	107		CKSRYB103K25
C	151		CKSRYB472K50
C	152		CKSQYB104K16
C	153		CEJA3R3M50
C	154		CKSQYB104K16
C	157		CEJA3R3M50
C	158		CKSYB474K16
C	159		CEJA220M6R3
C	160		CKSQYB104K16
C	161		CKSQYB104K16
C	162		CEJA3R3M50
C	163		CKSRYB102K50
C	170		CCSRCH100D50

=====Circuit Symbol and No.	===	Part Name	Part No.
C	201		CCSRCH471J50
C	202		CCSRCH100D50
C	203		CKSRYB332K50
C	204		CKSQYB473K16
C	205		CKSQYB473K16
C	206		CKSQYB104K16
C	207		CCSRCH560J50
C	209		CKSQYB104K16
C	211		CCSRCH101J50
C	212		CEJA470M6R3
C	213		CKSRYB103K25
C	216		CCSRCH101J50
C	217		CEJA1R5M50
C	219		CCSRCH471J50
C	220		CKSRYB103K25
C	230		CKSRYB103K25
C	231		CCSRCH330J50
C	232		CCSRCH150J50
C	233		CKSQYB104K16
C	234		CEJA330M10
C	235		CKSRYB332K50
C	236		CKSQYB473K16
C	237		CCSRCH120J50
C	239		CKSRYB472K50
C	240		CEJAR47M50
C	241		CKSQYB104K16
C	242		CEJAR47M50
C	243		CEJAR33M50
C	244		CKSQYB473K16
C	245		CKSRYB123K25
C	246		CKSQYB473K16
C	250		CCSRCH471J50

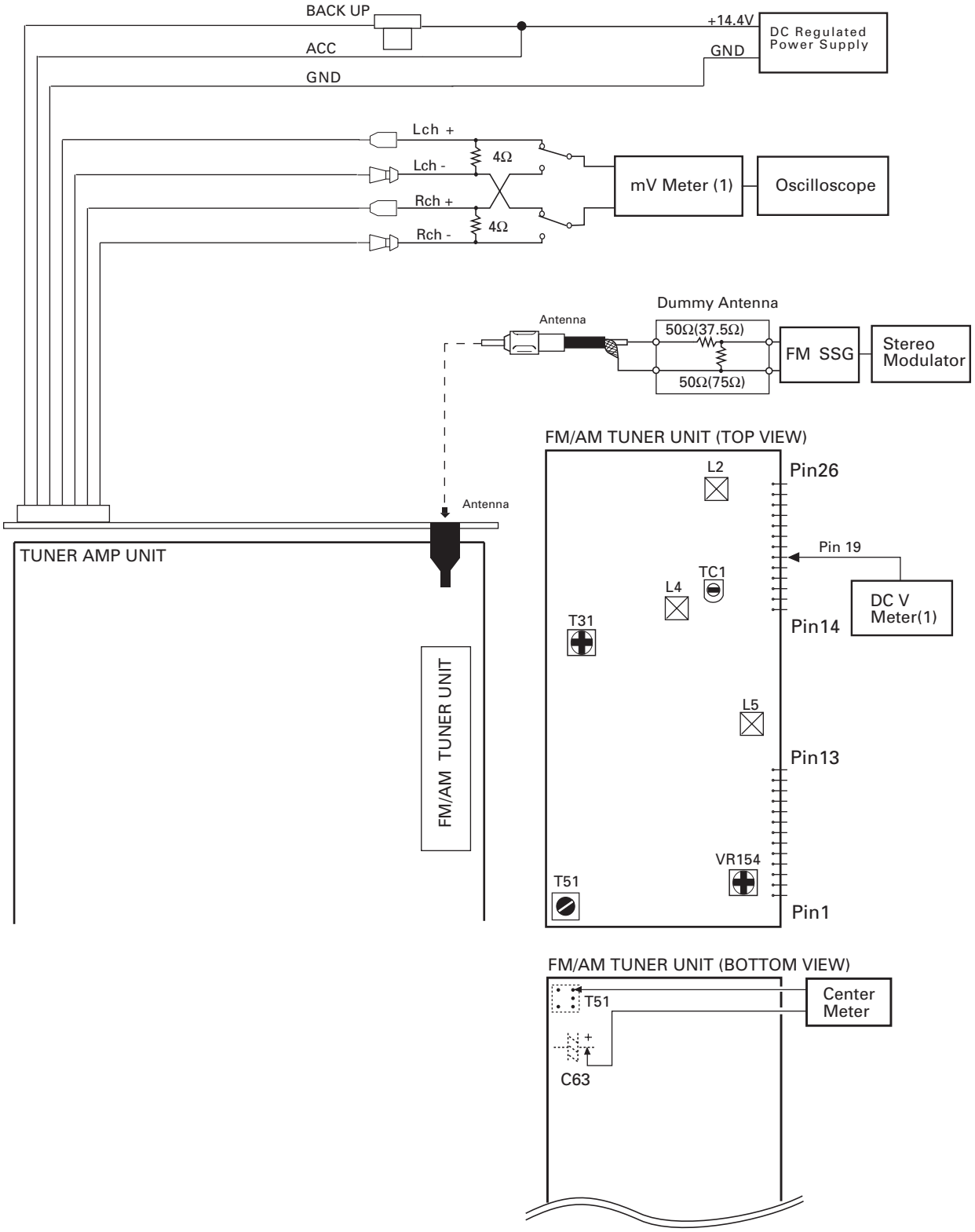
=====Circuit Symbol and No.	===	Part Name	Part No.
D		Unit Number : Unit Name : Cassette PCB	
S	1	Switch(Load)	ESN1016
S	2	Switch(Mute)	ESN1017
S	3	Switch(FWD/REV)	ESH1006
S	4	Switch(Eject)	ESG1006
R	1		RD1/4HM472J

Miscellaneous Parts List

M	1	Motor Unit	EXA1467
HD	1	Head Assy	EXA1466
FU	951	Fuse 10A	CEK1136

6. ADJUSTMENT

● Connection Diagram



FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

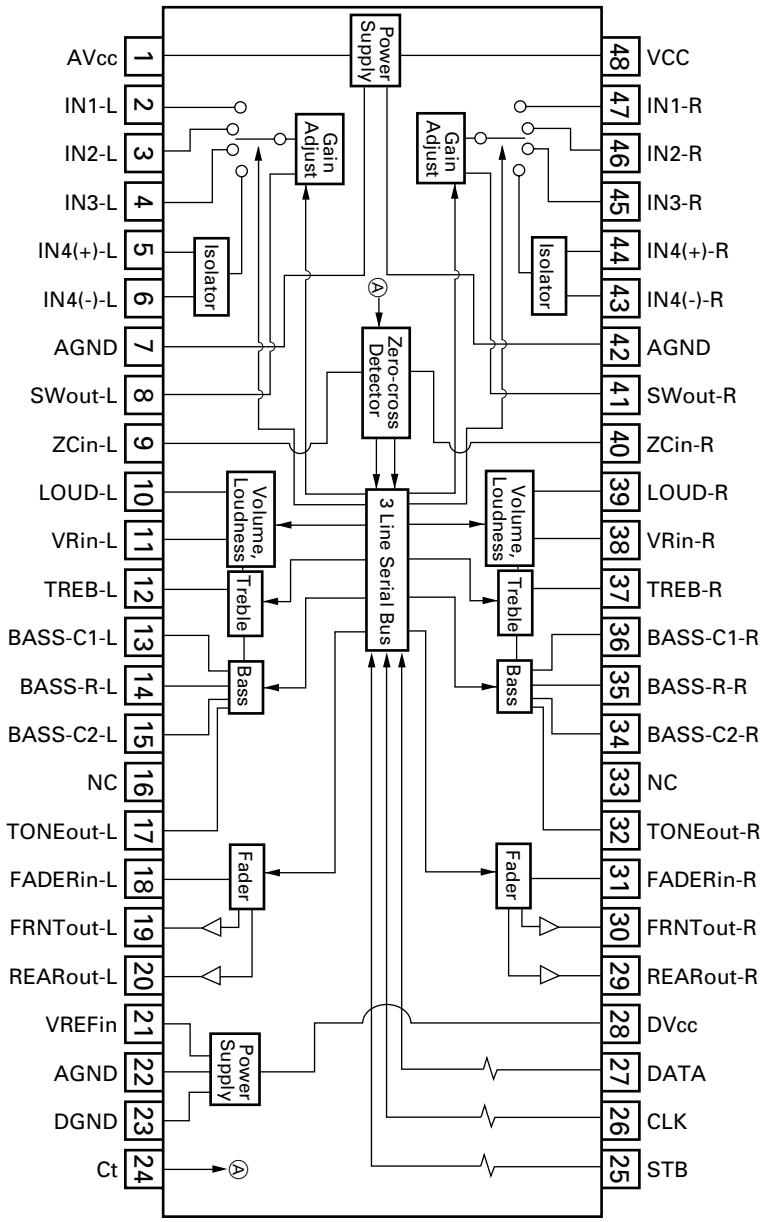
	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60—100	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
RF Trimmer	5	129.3 M	60—80	107.9	TC1	mV Meter(1) : Minimum
	6	RF Coil and RF Trimmer shall be adjusted twice or more				
IFT	7	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	8	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

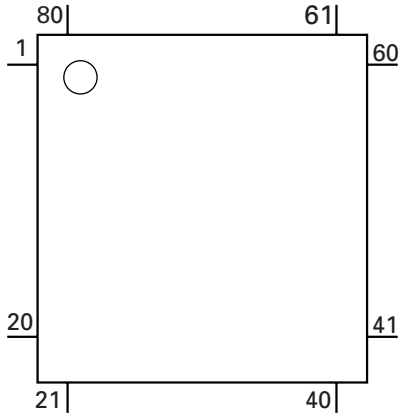
SN761029DL



● **Pin Functions(PE5017B)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1,2	NC			Not used
3	ADPW			A/D converter power
4	GND			GND
5,6	NC			Not used
7	AVREF1			(Connect to VDD)
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	$\overline{\text{DSENS}}$	I		Grille detach sense input
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock output
14	TUNPCE	O	C	PLL IC chip enable output
15-21	NC			Not used
22	$\overline{\text{SWVDD}}$	O	C	Grille power supply control output
23	NC			Not used
24	VDT	O	C	Data output for electronic volume
25	VCK	O	C	Clock output for electronic volume
26	VST	O	C	Strobe pulse output for electronic volume
27	SYSPW	O	C	System power supply control output
28	$\overline{\text{MUTE}}$	O	C	System mute output
29	DMINH	O	C	Mechanism mute cancel output
30–32	NC			Not used
33	GND			GND
34–37	NC			Not used
38	FM	O	C	FM power control output
39	AM	O	C	AM power control output
40–49	NC			Not used
50	$\overline{\text{EJECT}}$	I		Eject key input
51	$\overline{\text{TAPLD}}$	I		Tape loading input
52	MECPW	O	C	Cassette mechanism power output
53	$\overline{\text{MCMUT}}$	I		Mechanism mute input
54	NOR/$\overline{\text{REV}}$	I		Normal reverse input
55-59	NC			Not used
60	$\overline{\text{RESET}}$	I		Reset input
61,62	NC			Not used
63	CLKIN	I		Clock input
64	$\overline{\text{ASENS}}$	I		ACC power sense input
65	$\overline{\text{BSENS}}$	I		Back up power sense input
66	SD	I		SD input
67	$\overline{\text{ST}}$	I		FM stereo input
68	VDD			Power supply
69	X2			Oscillator output
70	X1			Oscillator input
71	GND			GND
72	NC			Not used
73	TESTIN	I		Test program mode input
74	AVDD			A/D converter analog power supply (VDD)
75	AVREF0			(A/D converter standard voltage input)
76	SL	I		Signal level input
77	MODEL	I		Model select input
78–80	NC			Not used

*PE5017B



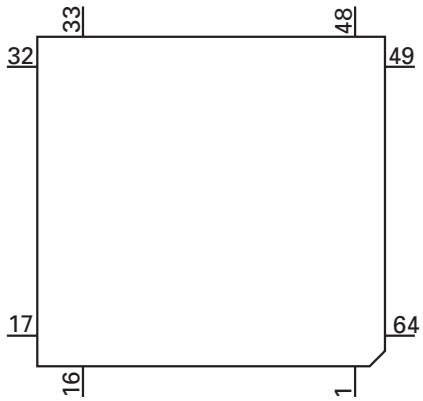
Format	Meaning
C	C MOS

IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

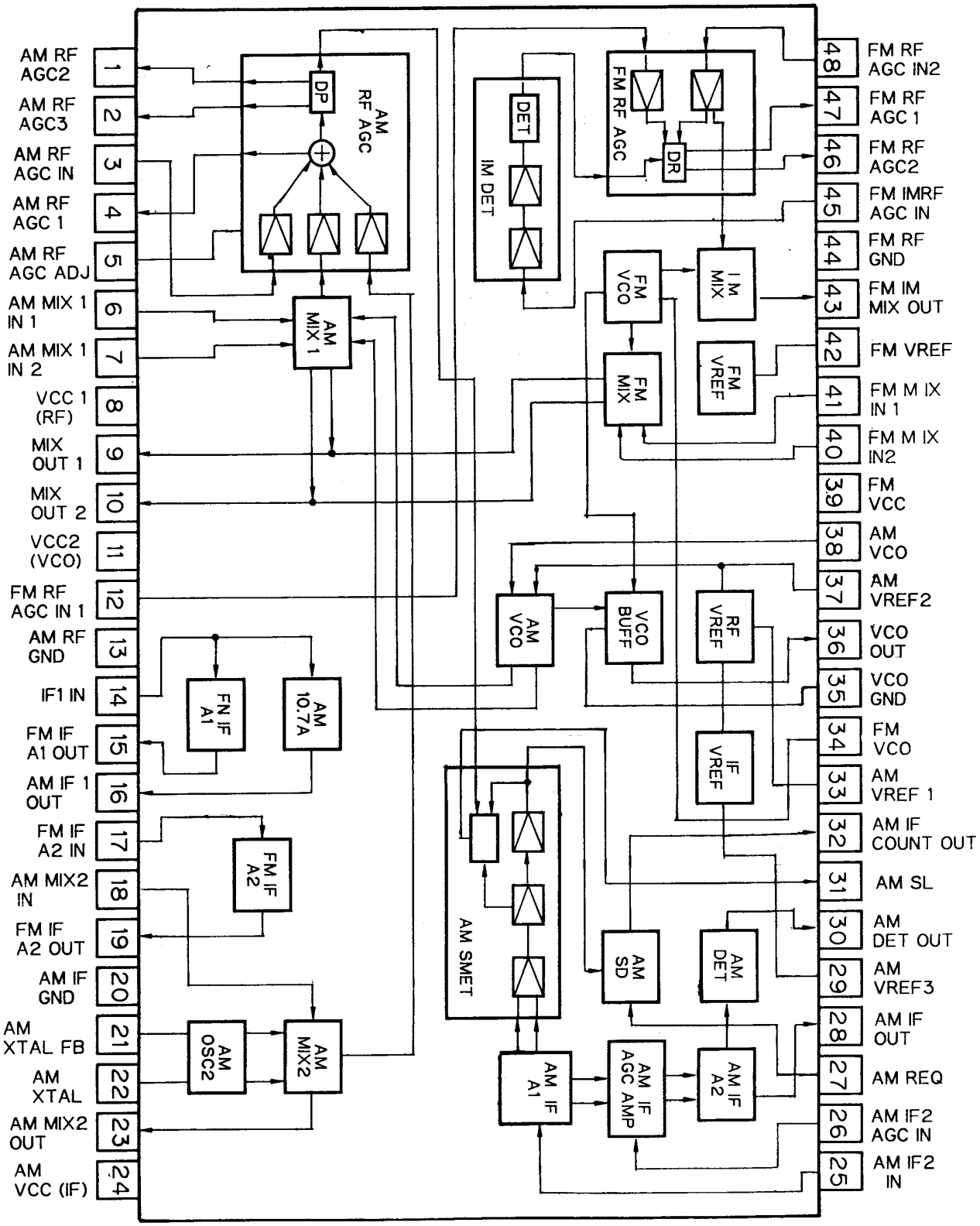
● **Pin Functions (PD6293A)**

Pin No.	Pin Name	I/O	Function and Operation
1–5	SEG4-0	O	LCD segment output 4-0
6–8	COM1-3	O	Common driver output 1-3
9	COM0	O	Common driver output 0
10	LCDB		LCD bias power supply
11–14	KS3-0	O	Key strobe output 3-0
15,16	KDT0,1	I	Key data input 0,1
17	REM	I	Remote control reception
18	DPDT	I	Display data input
19	NC		Not used
20	KYDT	O	Key data output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KDT2,3	I	Key data input 2,3
27,28	KST5,4	O	Key strobe output 5,4
29–55	SEG39-13	O	LCD segment output 39-13
56	VCC		5V
57–64	SEG12-5	O	LCD segment output 12-5

*PD6293A

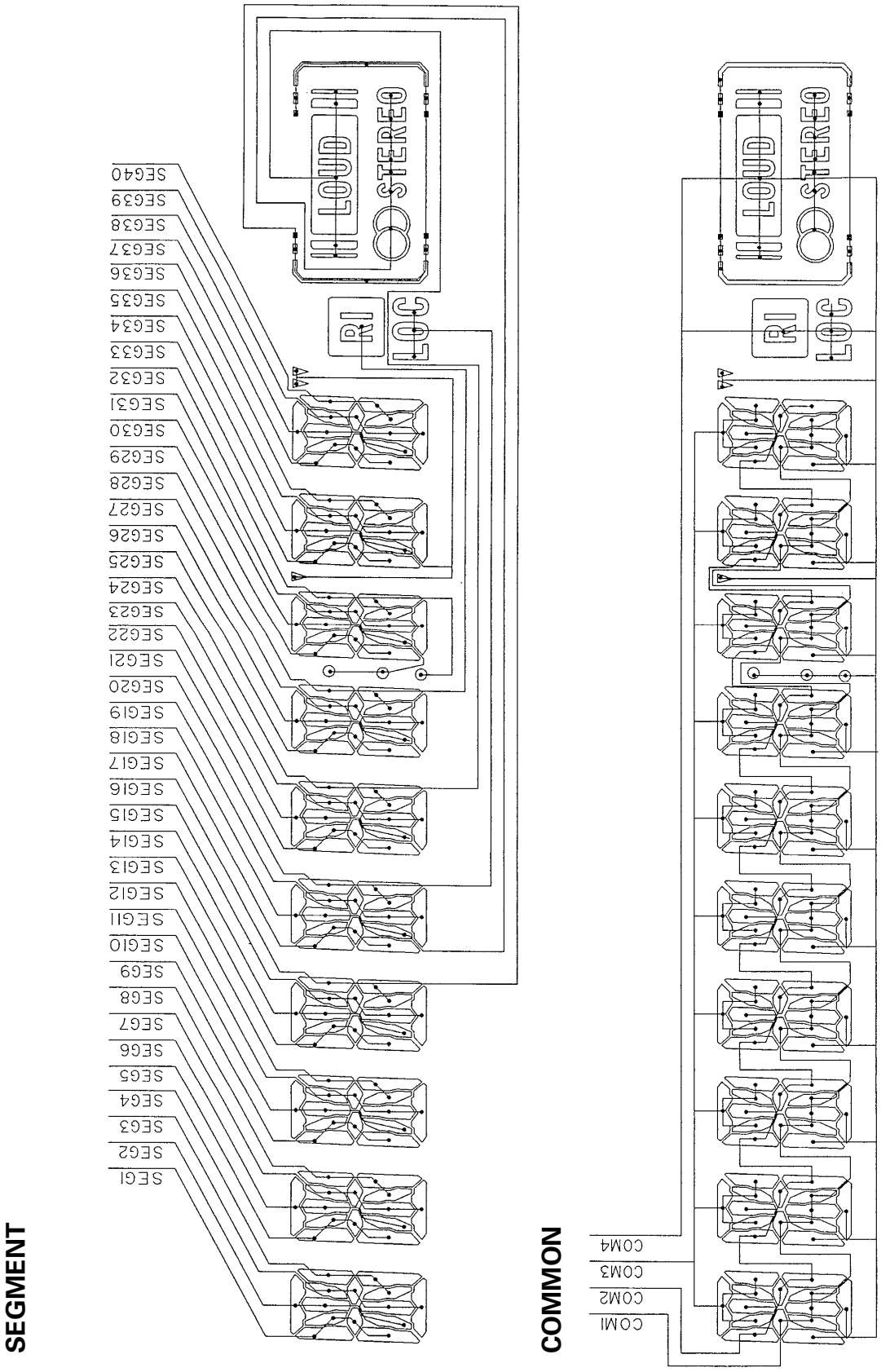


PA4023B


AM RF AGC2
AM RF AGC3
AM RF AGC IN
AM RF AGC 1
AM RF AGC ADJ
AM MIX 1 IN 1
AM MIX 1 IN 2
VCC 1 (RF)
MIX OUT 1
MIX OUT 2
VCC2 (VCO)
FM RF AGC IN 1
AM RF GND
IF1 IN
FM IF A1 OUT
AM IF 1 OUT
FM IF A2 IN
AM MIX2 IN
FM IF A2 OUT
AM IF GND
AM XTAL FB
AM XTAL
AM MIX2 OUT
AM VCC (IF)
FM RF AGC IN2
FM RF AGC 1
FM RF AGC2
FM IMRF AGC IN
FM RF GND
FM IM MIX OUT
FM VREF
FM M IX IN 1
FM M IX IN2
FM VCC
AM VCO
AM VREF2
VCO OUT
VCO GND
FM VCO
AM VREF 1
AM IF COUNT OUT
AM SL
AM DET OUT
AM VREF3
AM IF OUT
AM REQ
AM IF2 AGC IN
AM IF2 IN
DP
AM RF AGC
DET
IM DET
FM RF AGC
DR
FM VCO
I M MIX
FM MIX
FM VREF
AM MIX 1
AM VCO
VCO BUFF
RF VREF
IF VREF
FN IF A1
AM 10.7A
FM IF A2
AM SMET
AM SD
AM DET
AM OSC2
AM MIX2
AM IF A1
AM IF AGC AMP
AM IF A2

7.1.2 DISPLAY

● **CAW1513**



7.2 DISASSEMBLY

● **Removing the Case(not shown)**

1. Remove the three screws.
2. Remove the Case.

● **Removing the Cassette Mechanism Assy (not shown)**

1. Remove the four screws.
2. Disconnect the connector, and then removing the Cassette Mechanism Assy.

● **Removing the Panel Unit(Fig.1)**

1 Disengage the stopper at two locations indicated

2 Remove the Panel Unit.

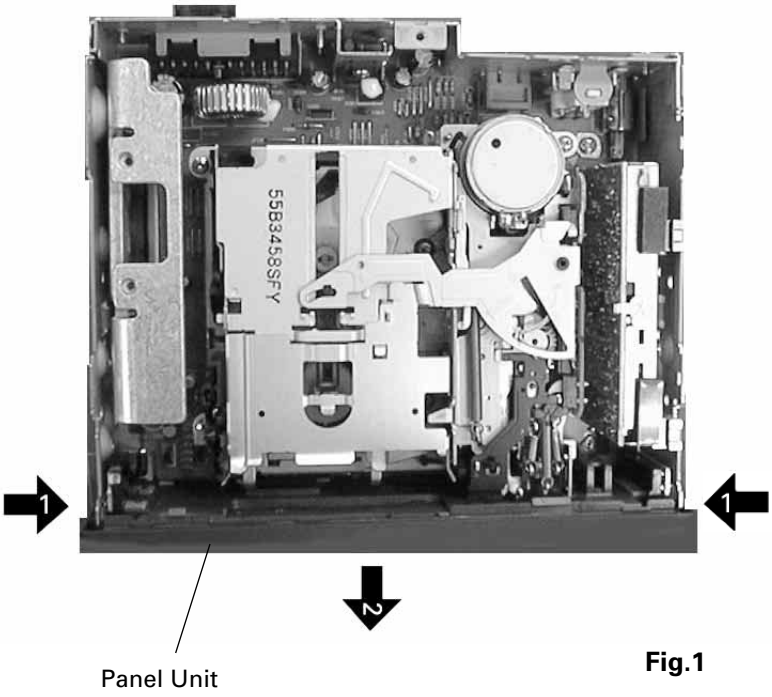


Fig.1

● **Removing the Tuner Amp Unit(Fig.2)**

1 Removing the two screws.

2 Removing the three screws.

3 Removing the screw.

4 Unbend the tabs at four locations indicated by arrow until straight.
Remove the Tuner Amp Unit.

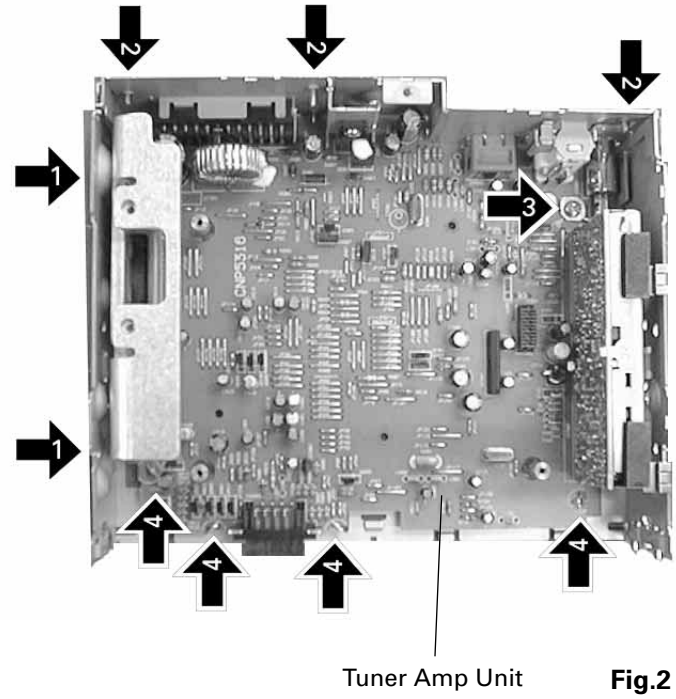
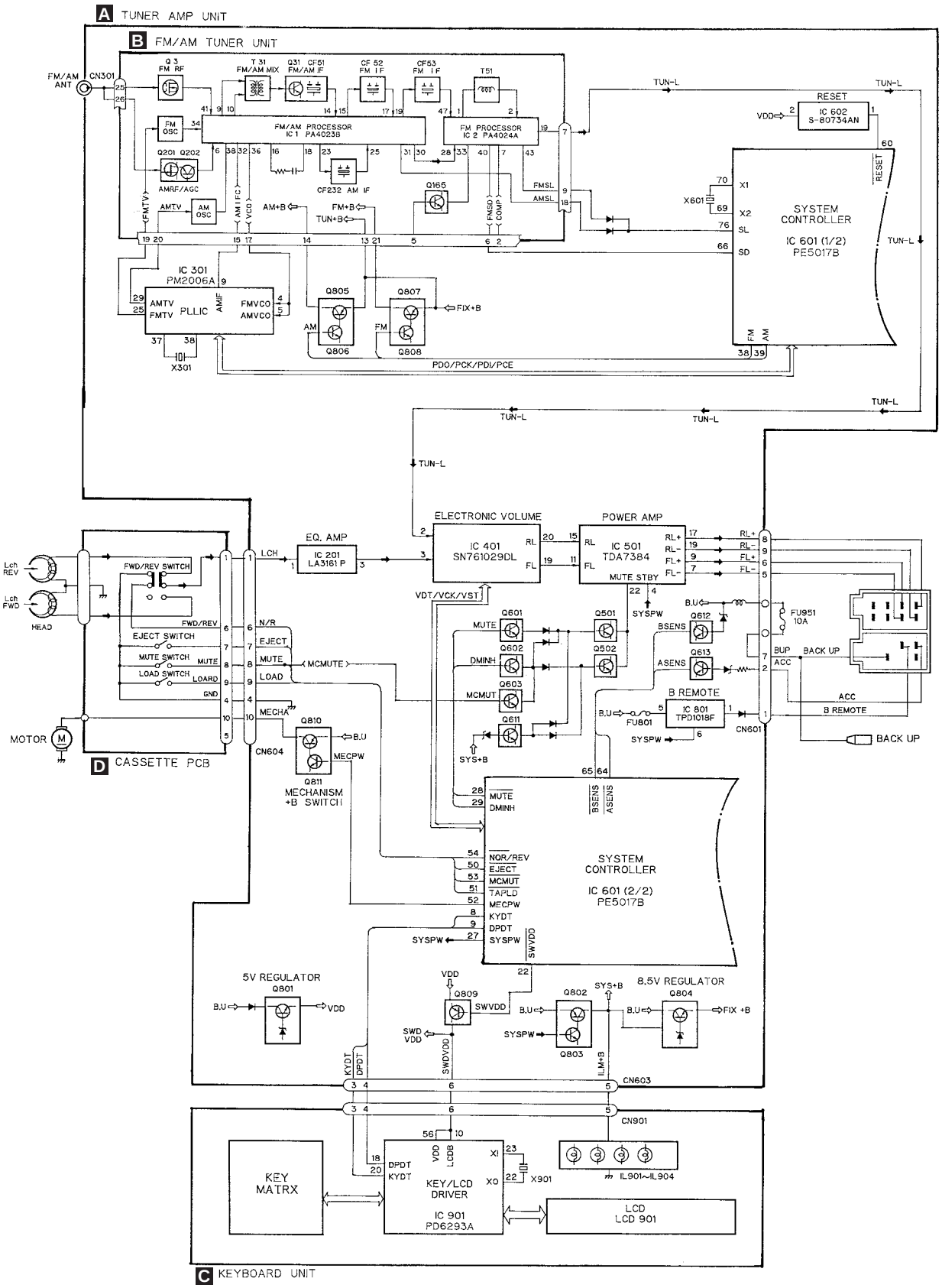


Fig.2

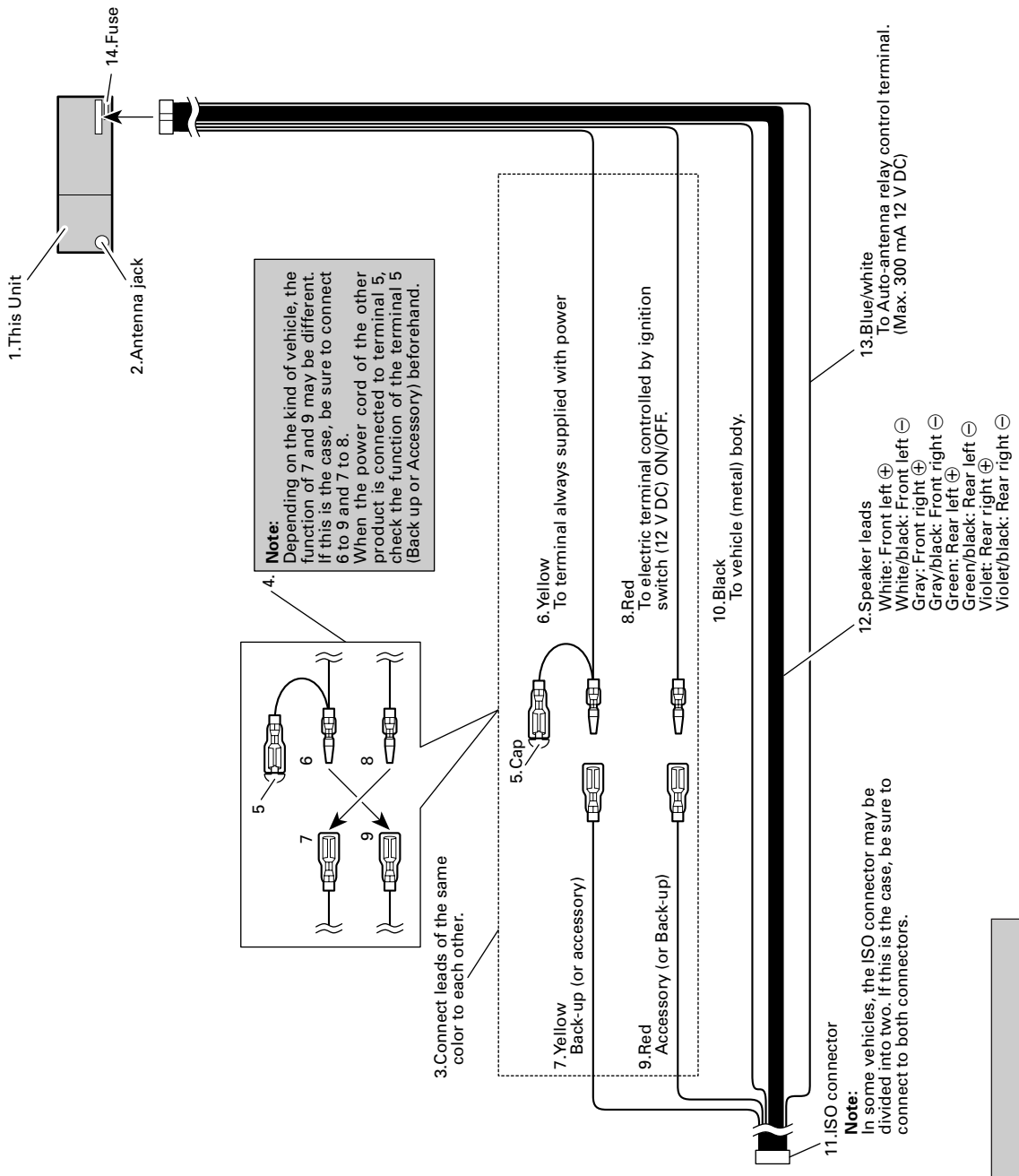
7.3 BLOCK DIAGRAM

● KEH-1800/X1M/EW



8. OPERATIONS AND SPECIFICATIONS

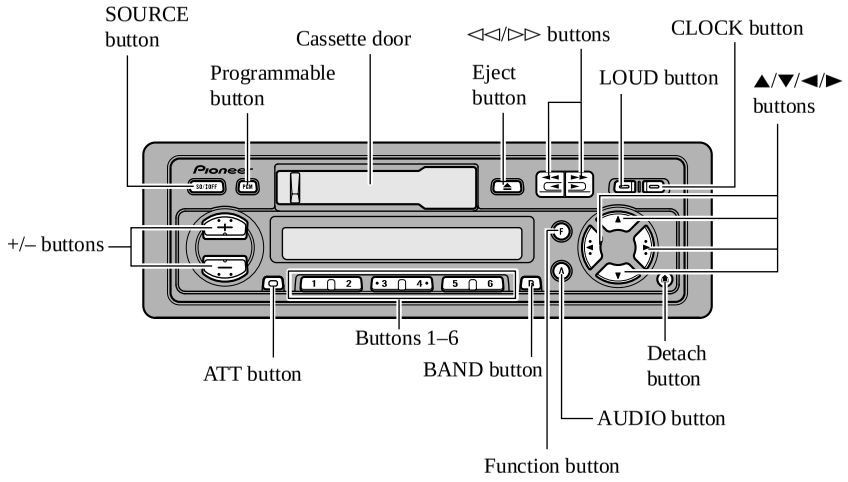
Connection Diagram


1.This Unit
2.Antenna jack
14.Fuse
4.
Note:
Depending on the kind of vehicle, the function of 7 and 9 may be different. If this is the case, be sure to connect 6 to 9 and 7 to 8.
When the power cord of the other product is connected to terminal 5, check the function of the terminal 5 (Back up or Accessory) beforehand.
5
6
8
7
9
3.Connect leads of the same color to each other.
5.Cap
6.Yellow
To terminal always supplied with power
7.Yellow
Back-up (or accessory)
8.Red
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
9.Red
Accessory (or Back-up)
10.Black
To vehicle (metal) body.
11.ISO connector
Note:
In some vehicles, the ISO connector may be divided into two. If this is the case, be sure to connect to both connectors.
12.Speaker leads
White: Front left ⊕
White/black: Front left ⊖
Gray: Front right ⊕
Gray/black: Front right ⊖
Green: Rear left ⊕
Green/black: Rear left ⊖
Violet: Rear right ⊕
Violet/black: Rear right ⊖
13.Blue/white
To Auto-antenna relay control terminal.
(Max. 300 mA 12 V DC)

⚠ CAUTION

- Cords for this unit and those for other units may be different colors even if they have the same function. When connecting this unit to another unit, refer to the supplied Installation manuals of both units and connect cords that have the same function.

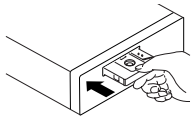
Key Finder



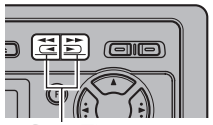
Using the Cassette Player

Basic Operation of Cassette Player

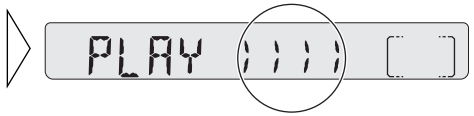
1. **Insert the cassette tape.**



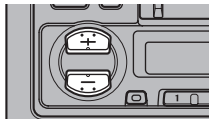
2. **Switch tape playback from side A to side B, or vice versa.**



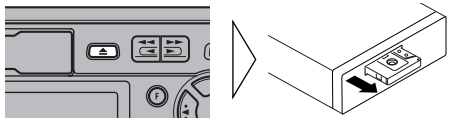
Same Time



3. **Raise or lower the volume.**



4. **Remove the cassette tape.**



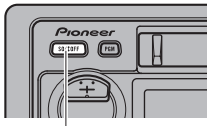
Note:

- The Tape function can be turned ON/OFF with the cassette tape remaining in this product.

Tuner Operation

Basic Operation of Tuner

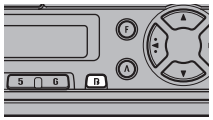
1. Select Tuner.



Each press
changes the Source ...

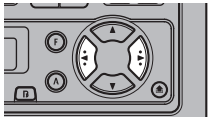
The program service name or frequency appears on the display.
("STEREO" indicator lights when a stereo station is selected.)

2. Select the desired band.



FI → FII → FIII → MW/LW

3. Tune the receiver to a higher or lower frequency.



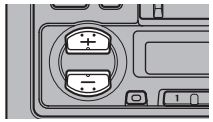
This product's tuner lets you select the tuning by changing the length of the time you press the button.

Manual Tuning (step by step)	0.3 seconds or less
Seek Tuning	0.3 – 2 seconds
Manual Tuning (continuously)	2 seconds or more

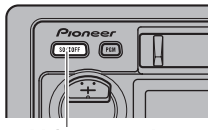
Note:

- To select a weak broadcasting station that cannot be tuned in with the Seek Tuning function, tune in with Manual Tuning.

4. Raise or lower the volume.



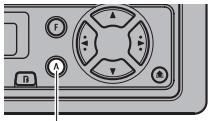
5. Turn the source OFF.



Hold for 1 second

Selecting the Mode

- **Select the mode you want to adjust.**



Each press
changes the Mode ...

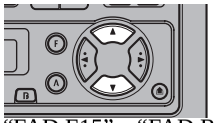
Each press of the AUDIO button selects the mode in the following order:
Fader/Balance ➞ Bass ➞ Treble ➞ Loudness

When audio modes are selected for adjustment, the setting returns to the normal display after 30 seconds.

Balance Adjustment

This function allows you to select a Fader/Balance setting that provides ideal listening conditions in all occupied seats.

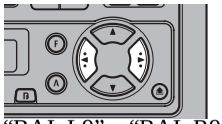
1. **Select the Fader/Balance mode.**
   After adjustment use the BAND button to return to the normal display.
2. **Shift the balance progressively to the front or rear speakers.**



"FAD F15" – "FAD R15" is displayed as it moves from front to rear.

Note:
- "FAD 00" is the proper setting when 2 speakers are in use.

3. **Shift the balance to the left or right speaker, respectively.**



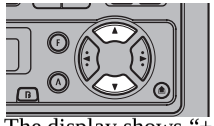
"BAL L9" – "BAL R9" is displayed as it moves from left to right.

Audio Adjustment

Bass/Treble Adjustment

This product is equipped with two tone adjustment modes, the Bass Adjustment and Treble Adjustment modes.

1. **Select "Bass Adjustment mode" or "Treble Adjustment mode".**
   After adjustment use the BAND button to return to the normal display.
2. **Increase or decrease the intensity of the bass or treble, whichever is selected.**



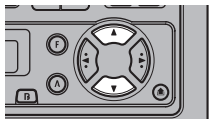
The display shows "+6" – "–6".

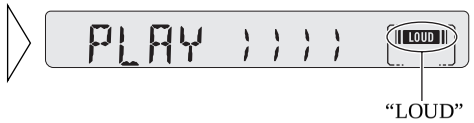
3. **Repeat steps 1 – 2 above for the other Bass or Treble Adjustment mode.**

Loudness Adjustment

The Loudness function compensates for deficiencies in the low and high sound ranges at low volume.

1. **Select the Loudness adjustment mode.**
   After selection use the BAND button to return to the normal display.
2. **Switch the Loudness function ON or OFF.**



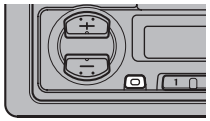


"LOUD"

Volume Attenuator

The attenuator reduces the volume instantly.

- **Cut the volume by about 90%.**



Repeat the preceding operation to return to previous volume.

If the (+) or (–) button is used to cancel the Attenuator mode, the sound will resume at a lower volume than before.

Specifications

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 8.5 A
Dimensions
(mounting size) ..... 178 (W) × 50 (H) × 150 (D) mm
(front face) ..... 188 (W) × 58 (H) × 19 (D) mm
Weight ..... 1.2 kg

Amplifier

Maximum power output ..... 40 W × 4
Continuous power output ..... 22 W × 4
(DIN45324, +B=14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω allowable)
Tone controls
(Bass) ..... ±12 dB (100 Hz)
(Treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)
(volume: –30 dB)

Cassette player

Tape ..... Compact cassette tape (C-30 – C-90)
Tape speed ..... 4.76 cm/sec.(+0.14cm/sec.,-0.05cm/sec.)
Fast forward/rewinding time ..... Approx. 90 sec. for C-60
Wow & flutter ..... 0.13% (WRMS)
Frequency response ..... 40 – 14,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 52 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity
..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity .... 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.